

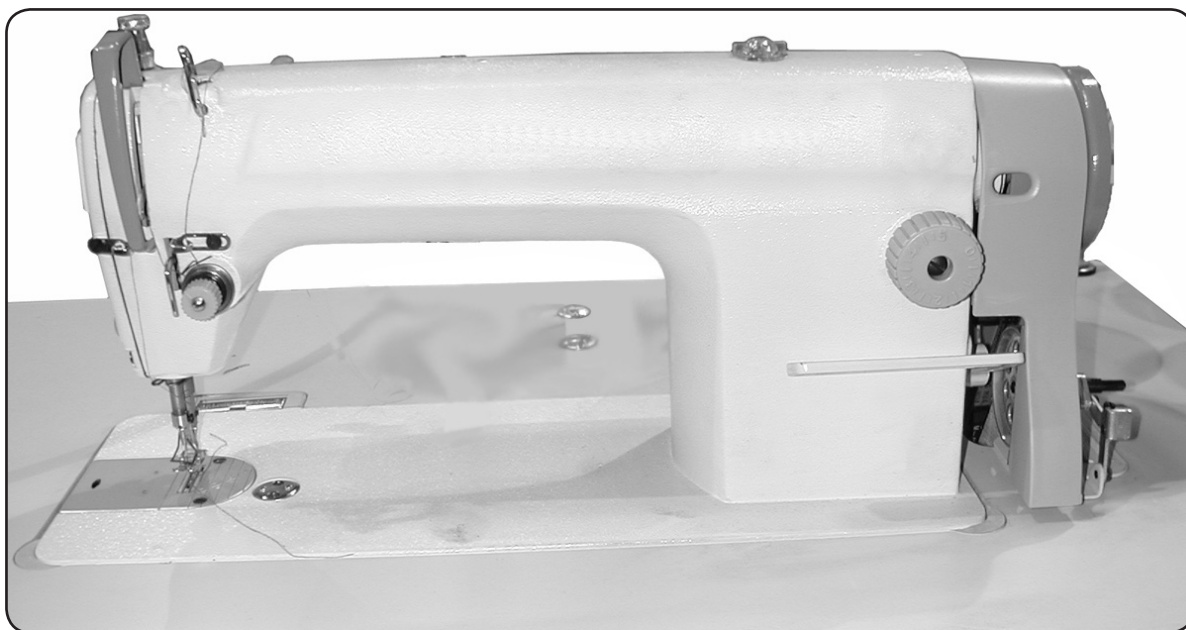
CENTRAL MACHINERY

®

SINGLE NEEDLE INDUSTRIAL SEWING MACHINE

Model 3914

SET UP AND OPERATING INSTRUCTIONS



Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

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For technical questions or replacement parts, please call 1-800-444-3353.

SPECIFICATIONS

Machine Type	Heavy duty, industrial sewing machine; high speed, single needle-lock stitch
Drive	V-belt driven (size 41 replacement belt)
Action	Foot pedal operation, along with a knee and manual lifting arm for presser foot.
Feed Type	Link style needle feed
Sewing Directions	Forward and reverse feed
Machine Dimensions	20-3/4" L x 10" H
Accessories	- 2 Screwdrivers- 3 Bobbins- Small lubricating bottle with tip- Spare needles (size 90/14) - Power Switch
Table Stand Kit	Table Stand Kit (Model 03929) not included
Stitching Speed	5,500 SPM (Strokes per minute)
Motor Type	Clutch motor; 3,450 RPM, 5.8/2.9 amps, 110/220 V~, 60 Hz; single phase
Sewing Thickness	up to 5/16"
Overall weight	61.6 lb.

Note: Performance of this tool may vary depending on variations in local line voltage.
Extension cord usage may also affect tool performance.

Warning: Make certain that the voltage switch on the motor is set correctly for your use.
See page 6. This machine is set up for 110V usage. Rewiring of the plug and an appropriate outlet is required for 220V usage.

This Machine requires oil to be added before use - see page 6 for details.

Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

SAFETY WARNINGS AND PRECAUTIONS

WARNING: When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

Read all instructions before using this tool!

1. **Keep work area clean.** Cluttered areas invite injuries.
2. **Observe work area conditions.** Do not use machines or power tools in damp or wet locations. Don't expose to rain. Keep work area well lighted. Do not use electrically powered tools in the presence of flammable gases or liquids.
3. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.
4. **Store idle equipment.** When not in use, tools must be stored in a dry location to

inhibit rust. Always lock up tools and keep out of reach of children.

5. **Use the right product for the job.** Do not attempt to force a small product or attachment to do the work of a larger industrial tool. There are certain applications for which this product was designed. It will do the job better and more safely at the rate for which it was intended. Do not modify this product and do not use this product for a purpose for which it was not intended.
6. **Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically nonconductive clothes and nonskid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
7. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across running machines.
8. **Maintain tools with care.** Keep needles sharp and tools clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have them repaired by a qualified technician. The handles must be kept clean, dry, and free from oil and grease at all times.
9. **Disconnect power.** Always turn the machine off and, if possible, disconnect the power plug of the machine from the receptacle before adjusting, repairing, or cleaning the machine; leaving the machine unattended; tilting the machine head; or removing the V-belt.
10. **Remove adjusting keys and wrenches.** Check that keys and adjusting wrenches are removed from the machine work surface before plugging it in.
11. **Avoid unintentional starting.** Be sure the switch is in the Off position when not in use and before plugging in.
12. **Stay alert.** Watch what you are doing, use common sense. Do not operate when you are tired.
13. **Check for damaged parts.** Before using any product, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use if any switch does not turn On and Off properly.
14. **Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.
15. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
16. **Do not operate tool if under the influence of alcohol or drugs.** Read warning labels if taking prescription medicine to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
17. **Use proper size and type extension cord.** If an extension cord is required, it must be of the proper size and type

to supply the correct current to the tool without heating up. Otherwise, the extension cord could melt and catch fire, or cause electrical damage to the tool. This tool requires use of an extension cord with up to **10 amps** capability (up to 50 feet), with wire size rated at **18 AWG**. Longer extension cords require larger size wire. If you are using the tool outdoors, use an extension cord rated for outdoor use (signified by “WA” on the jacket).

18. **Maintenance.** For your safety, service and maintenance should be performed regularly by a qualified technician.
19. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
20. **WARNING:** The brass components of this product contain lead, a chemical known to the State of California to cause birth defects (or other reproductive harm). (California Health & Safety code § 25249.5, *et seq.*)
21. **The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.**

Sewing Safety Precautions

1. Keep hands away from the needle when you turn the power switch on, or while the machine is operating.

2. Do not place your fingers into the thread take-up cover while the machine is operating.
3. Never leave the machine running and unattended.
4. During operation, never place your head, hair, or hands in the proximity of the hand wheel, V-belt, bobbin winder, or motor.
5. Do not operate the machine with any safety guards removed.
6. This machine shall only be operated by appropriately trained operators.
7. For your personal protection, we recommend you wear ANSI approved safety glasses when using the machine.
8. If oil or grease comes in contact with your eyes or skin, immediately wash the affected areas and consult a physician.
9. Tampering, modifying or altering any device (aside from the cord and plug by a licensed electrician) on the machine is prohibited and will void manufacturer’s warranty.
10. Repair, adjustment, and specific maintenance shall only be performed by a qualified service technician. Alteration or replacement of the 3 prong grounded electrical plug provided with the machine must only be performed by a licensed electrician. This machine must be properly grounded.
11. This sewing machine is only to be used for the purpose intended.

GROUNDING

⚠ WARNING

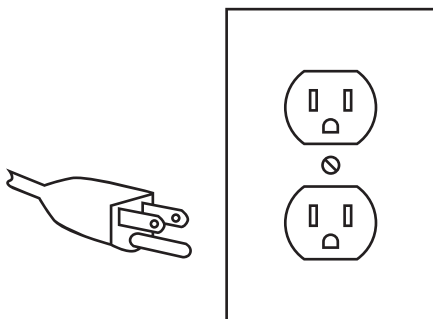
TO PREVENT ELECTRIC SHOCK

AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:



Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

Grounded Tools: Tools with Three Prong Plugs



3-Prong Plug and Outlet

1. Tools marked with "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. **(See 3-Prong Plug and Outlet.)**

2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal. **(See 3-Prong Plug and Outlet.)**
3. The tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the preceding illustration. **(See 3-Prong Plug and Outlet.)**

Extension Cords







1. **Grounded** tools require a three wire extension cord. **Double Insulated** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)**
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Table A.)**
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine

the required minimum cord size. (See **Table A.**)

6. If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.
7. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120/240 VOLT)					
NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	25'	50'	75'	100'	150'
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-
TABLE A * Based on limiting the line voltage drop to five volts at 150% of the rated amperes.					

Symbology

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
	Volts Alternating Current
	Amperes
	No Load Revolutions per Minute (RPM)

UNPACKING

When unpacking, check to make sure that the parts shown in the photo on the following page are included. Note that the machine table shown is not included, and must be ordered separately. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual as soon as possible.

ASSEMBLY

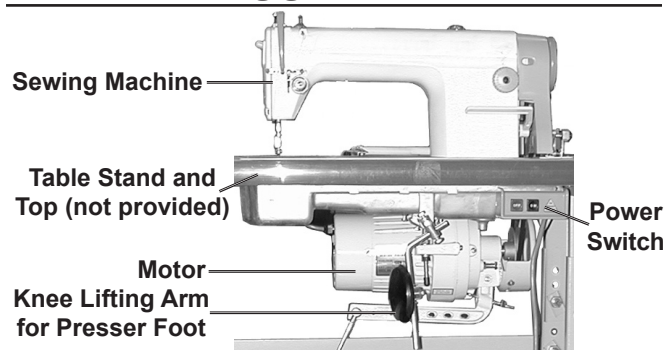
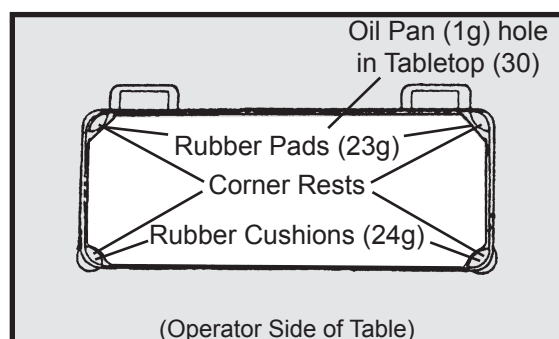


Figure 1

The assembly instructions describe mounting the Single-Needle Sewing Machine (Model 03914) to the Table Stand (Model 03929), not included. In order to complete this procedure, you must first purchase and assemble the Table Stand Kit (Model 03929).

Installing the Oil Pan and Sewing Machine to the Tabletop of Industrial Sewing Machine Table (SKU 3929 - sold separately)



 Rubber Pads (23g)


 Rubber Cushions (24g)

Figure 2

1. Working in the rectangular hole of the Tabletop where the Oil Pan (1g) will sit: Place the Rubber Cushions (24g) on the operator-side corner rests, and the Rubber Pads (23g) on the hinge-side corner rests. Secure with two Tacks (25g) in each Pad or Cushion.

Note: The Rubber Pads (23g) are optional. They may be omitted, or used under the Rubber Cushions (24g) to adjust the tilt

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of the machine, depending on the user's preference.

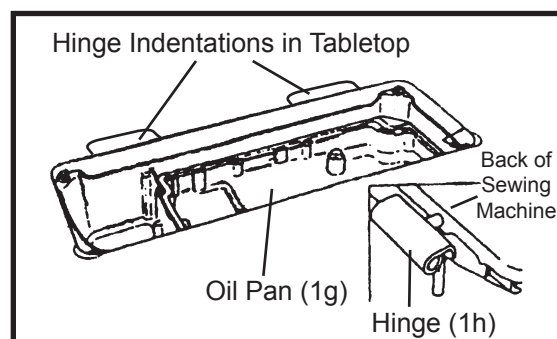


Figure 3

2. Seat the Oil Pan (1g) on the Rubber Pads and Cushions in the Tabletop opening.
3. Insert the Hinge Cushions (2h) into the tabletop, securing them with two Tacks (25g) in each Hinge Cushion.
4. Insert the Hinges (1h) into the holes in the back of the Sewing Machine.

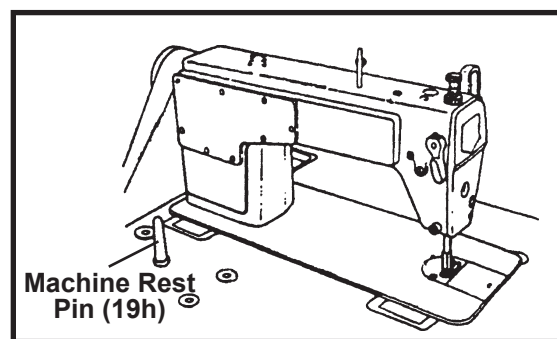


Figure 4

5. Insert the Machine Rest Pin (19h) in the hole provided in the table stand.
6. Carefully place the machine, hinge side first, into the Rubber Hinge Plates and over the Oil Pan.

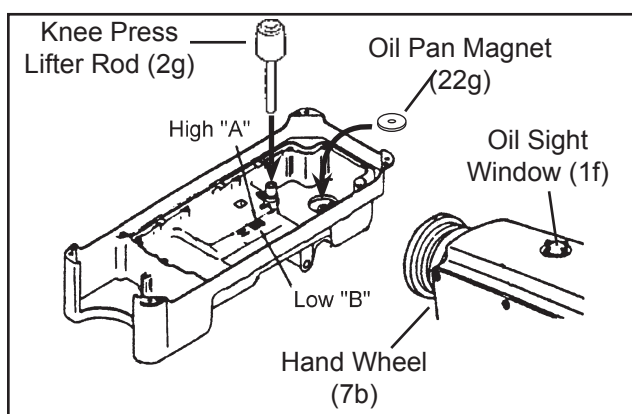


Figure 5

7. Tilt the machine back to expose the Oil Pan (1g). Insert the Knee Press Lifter Rod (2g). Place the Oil Pan Magnet (22g) in the lowest portion of the Oil Pan.
8. Fill the Oil Pan with the Oil (20h) to the "High" mark "A". Add more oil when the level is to the "Low" mark "B". After lubrication, and during operation, oil splashing can be seen through the Oil Sight Window (1f).
9. Tilt the machine head back to the table top.

Mounting the Motor

Note: The Motor is heavy. You will need a helper to hold the motor in place while tightening the Nuts (67j) on the Carriage Bolts (70j) in step 5 on the following page.

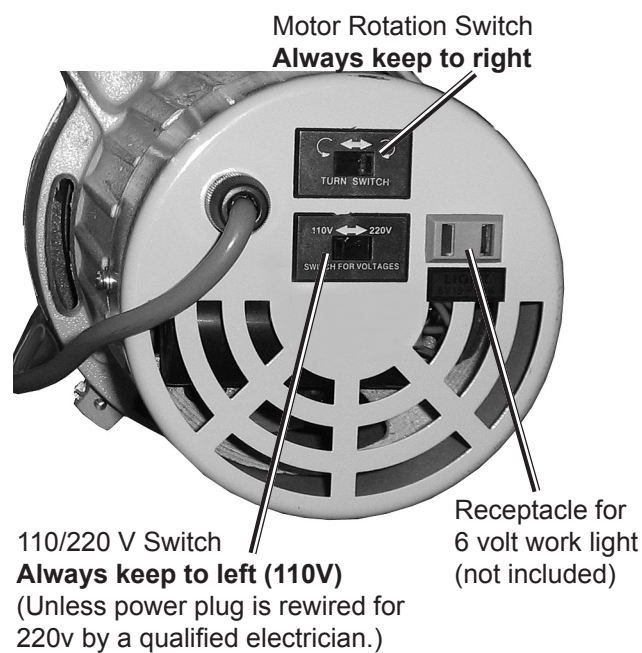


Figure 6

1. The motor can be set for 110V or 220v. **Make certain that the voltage switch on the motor is set correctly for your use. This machine is set up for 110V usage. Set the 110/220V Switch to 110V (Switch to the left) unless you have your outlet changed to 220V by a qualified electrician. Rewiring of the plug and an appropriate outlet is required for 220V usage.**
2. The rotation of the motor can also be set to clockwise or counterclockwise rotation. This setting should always be set to the right, which makes the sewing machine pulley rotate counterclockwise. Do not use this setting to reverse the direction of the machine. Use the Reverse Control Lever (22e) to reverse the stitch feed direction when sewing.

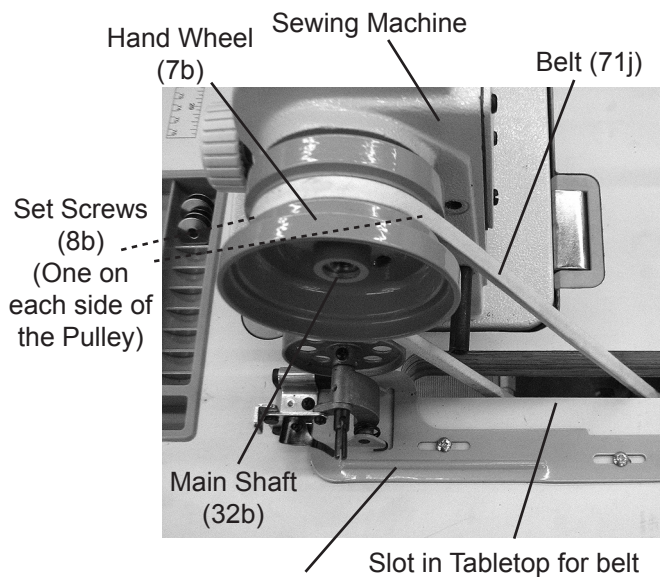


Figure 7 Bobbin Winder Assembly

3. Slide the Sewing Machine Hand Wheel (7b) onto the Main Shaft (32b) of the Sewing Machine. Align one of the Set Screw holes (on the side of the Pulley) with the flat section of the Main Shaft. Tighten the Set Screws (8b) enough to hold the Pulley in place, but not fully tightened.

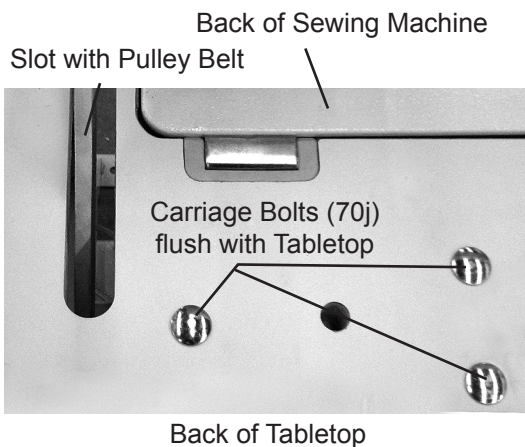


Figure 8

4. Using a rubber mallet (sold separately) tap the three Carriage Bolts (70j) into the top of the Tabletop so that they are flush with the tabletop.

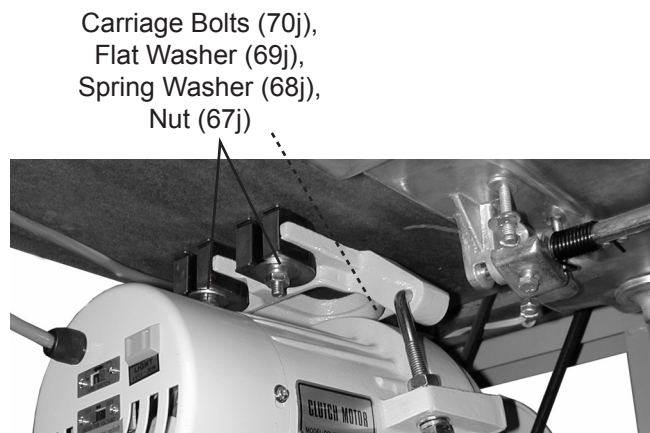


Figure 9

5. Mount the Motor to the underside of the tabletop using the Carriage Bolts (70j), Flat Washers (69j), Spring Washers (68j), and Nuts (67j). Finger tighten only.

Aligning the Pulleys

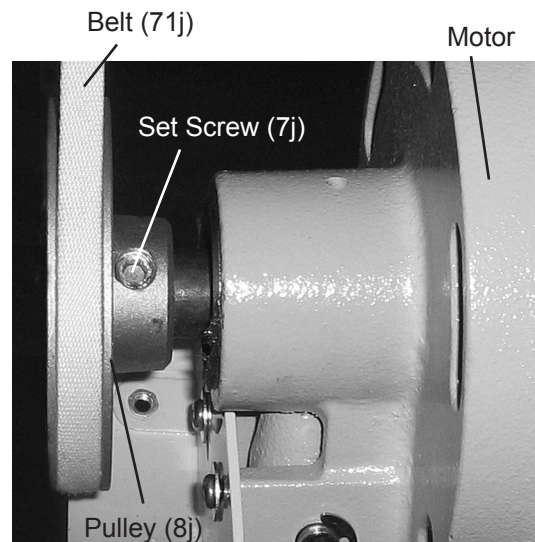


Figure 10

1. Place the Belt (71j) around the Sewing Machine Hand Wheel (7b), through the slot in the table top, and around the motor Pulley (8j). Make sure the motor pulley is in line with the Sewing Machine Hand Wheel. If you cannot get the Pulleys to line up by sliding them slightly in either direction, you may need to turn the Motor Pulley around. To do this, loosen the Set Screw (7j) on the motor Pulley, slide the Pulley off of the motor

and turn it around. Move the belt by hand to verify that it is aligned and tracking correctly.

2. Once you have the Pulleys aligned, remove the Belt from the Sewing Machine Hand Wheel (7b), and tighten its Set Screws (8b). Replace the Pulley and tighten the Motor Set Screw (7j).
3. Attach the Pulley Safety Cover (1j) over the motor Pulley (8j), using the Bolt (2j), Spring Washer (3j), Flat Washer (4j), and Lock Nut (5j).

Adjusting the Belt Tension

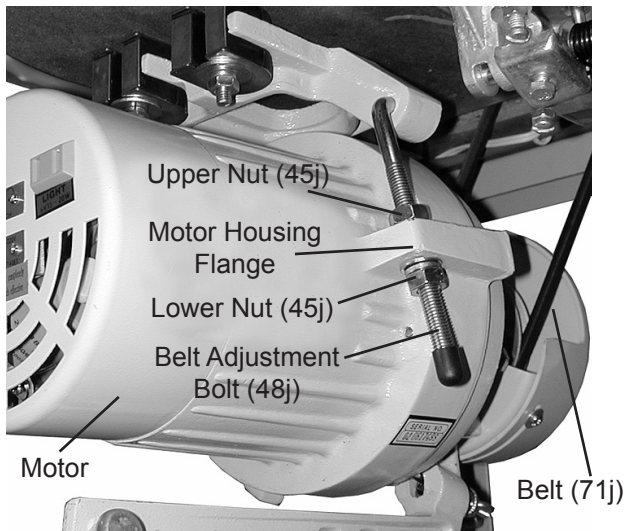
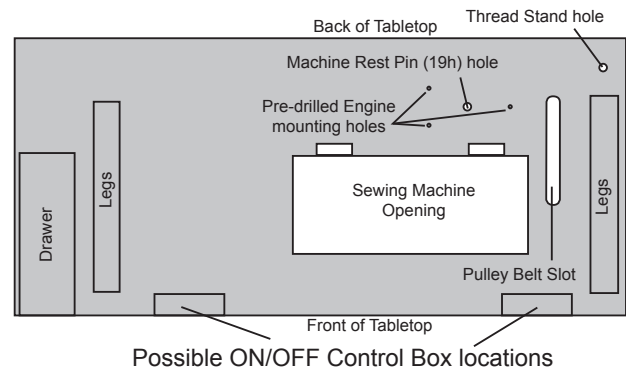


Figure 11

1. To tighten the Belt (71j) tension, turn the lower Nut (45j) on the Belt Adjustment Bolt (48j) counterclockwise, moving the nut down towards the end of the bolt enough so that the motor hangs as low as its weight allows. Turn the upper Nut (45j) counterclockwise until it tightens against the Motor Housing Flange. The proper tension is reached when the Belt can only be pushed in 1/2 inch. Test the Belt tension. If it needs to be tighter, move the lower Nut and push the motor down. Tighten in place with the upper Nut.

Caution: Do not tighten the Belt so much that the left side of the Sewing Machine begins to lift up from the Oil Pan.

2. Once the Belt is the proper tension, tighten both Nuts against the Motor Housing Flange to hold the motor in place.
3. Install the Pulley Safety Cover (1j) over the motor Pulley (8j), using the Bolts (2j), Flat Washers (4j), Spring Washers (3j), and Nuts (5j).



ON/OFF Control Box shown mounted on right from underside of tabletop.



Figure 12

4. Mount the ON/OFF Control Box (63j) under the Tabletop, in one of the locations shown above, using the Wood Screws (72j) and Flat Washers (73j).
5. Connect the Treadle Joint Assembly (from the Tabletop 3929 - sold separately) to the end of the motor Clutch Arm (19j), using the nut and bolt on the end of the Joint Assembly. Adjust the length and/or location of the components if needed.

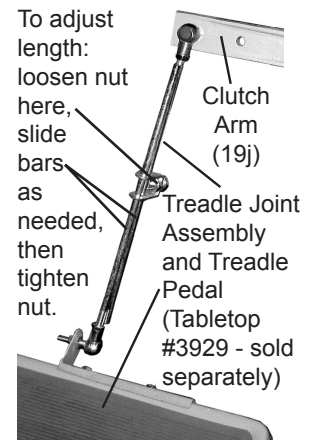


Figure 13
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Mounting the Thread Stand

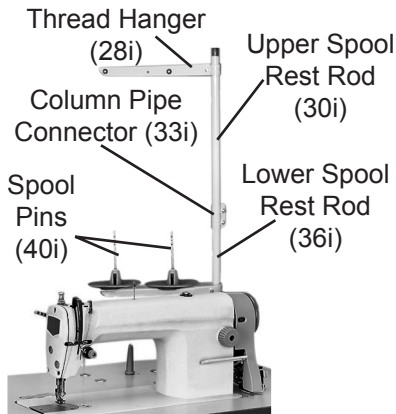


Figure 13

Note: The Thread Stand is designed to be mounted on the Table Stand Kit (Model 03929-sold separately). Unless indicated otherwise, all parts referred to in this set of instructions are listed in the **I - Bobbin Winder & Thread Stand Unit Parts List and Diagram**. During assembly, it will be helpful to refer to that list and diagram.

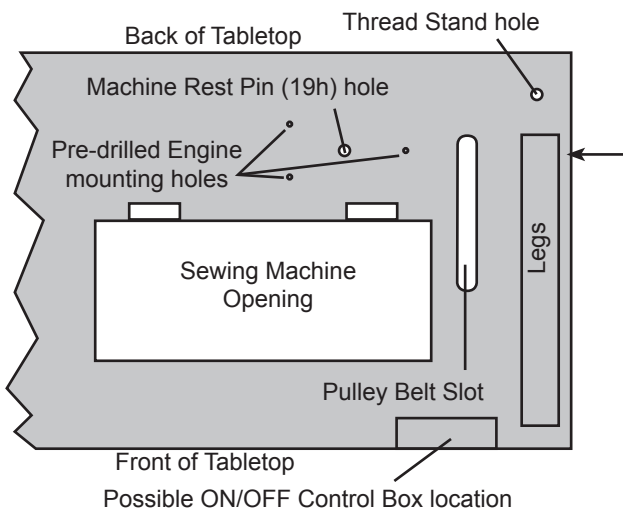


Figure 14

6. Place the Washer (37i) onto the Lower Spool Rest Rod (36i) and insert the Rod into the Thread Stand Hole in the far right back corner of the tabletop (see above). Place another Washer (37i) over the end of the Rod, and thread on and tighten a Nut (38i).
 7. If needed, bend the Spool Support (46i) so it slides easily over the Lower Spool Rest Rod (36i), then slide it over the Lower Spool Rest Rod, about halfway down. Insert a Bolt (31i) and Nut (47i) through the Support.
- Note:** The Support has tabs that hold onto the corners of the Nut to make tightening easier. When assembling, place the Nut on the side with these tabs.
8. Tighten the Screw.
 9. Insert the threaded end of the Spool Pin (40i) through one of the holes in the top of the arm of the Spool Support (46i). Place a Washer (32i) and Nut (35i) over the end of the Pin and tighten. Place the Spool Rest (41i), Spool Mat (42i), and the Spool Vibration Stopper (39i) over the end of the Spool Pin. Repeat this step for both of the Spool Pins (40i).
 10. Place the Column Pipe Connector (33i) over the top of the Lower Spool Rest Rod (36i) until the Rod is about halfway through the Connector. Place a Bolt (34i) and Nut (35i) through the bottom hole in the Connector and finger-tighten.
 11. Place the Upper Spool Rest Rod (30i) into the top of the Column Pipe Connector (33i). Place a Bolt (34i) and Nut (35i) through the top hole in the Connector. Tighten all of the Screws and Nuts in the Connector.
 12. Remove the Column Cap (29i) from the top of the Upper Spool Rest Rod (30i). If needed, bend open the Thread Hanger (28i) so it slides easily over the Upper Spool Rest Rod. Slide the Thread Hanger about halfway over the top of the Upper Spool Rest Rod. Insert a Bolt (31i) and Nut (47i) through the Hanger as explained in the note in step 7, above. Tighten the Screw and place the Column

Cap over the end of the Upper Spool Rest Rod.

Mounting the Bobbin Winder

The Bobbin Winder is used to wind thread onto the Bobbin (17h). It is mounted so that it contacts the Belt (71j) when needed for bobbin winding.

Note: Unless indicated otherwise, all parts referred to in this set of instructions are listed in the **I - Bobbin Winder & Thread Stand Unit Parts List and Diagram**. During assembly, it will be helpful to refer to that list and diagram.

13. Set the Bobbin Winder to the 'ON' Position - See **Bobbin Winder Operation** on the following page.

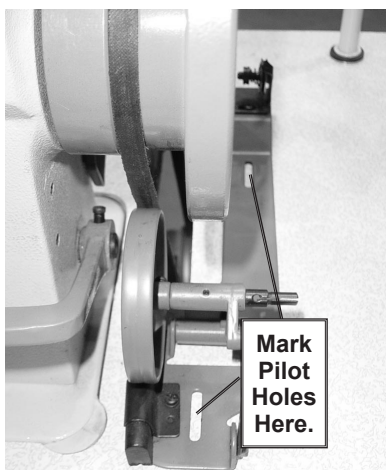


Figure 15

14. **Make sure the Bobbin Winder is in the 'ON' position.** Position the Base (1i) so that the Wheel (3i) lines up with, and just touches, the belt. Mark pilot hole locations on the table through the center of each of the two channels in the Base, as indicated above.
15. Set the Base (1i) aside and drill pilot holes for each of the two marked locations. Reposition the base and secure using two Wood Screws (26i) and

Washers (27i). Leave the Screws just loose enough to allow the Base to slide.

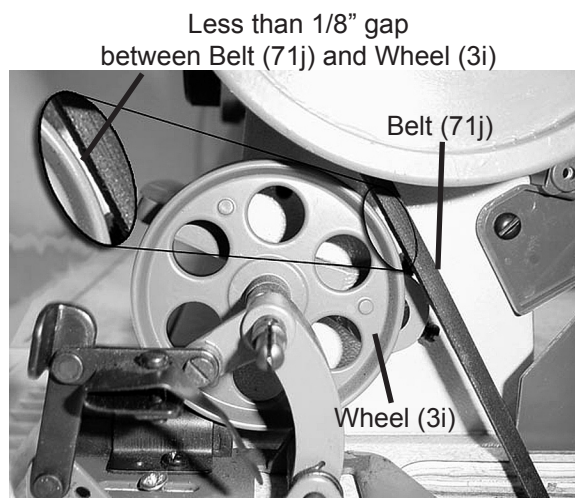


Figure 16

16. Put the Bobbin Winder in the 'OFF' position - See **Bobbin Winder Operation** on the following page. Slide the Bobbin Winder Assembly close to the belt until it just barely doesn't touch it (1/8" gap or less) - as shown above. Tighten the Wood Screws (26i) securely.

Installing the Belt Covers

1. Install the Front Belt Cover (4h) over the Sewing Machine Hand Wheel (7b), using the Belt Cover Support (11h), the Belt Cover Bolts (10h, 12h), and the Belt Cover Cap (5h).
2. To install the Rear Belt Cover (7h), align the cover on the Tabletop over the back side of the opening where the Belt (71j) enters the tabletop. Mark where to drill holes. Remove the Rear Belt Cover and drill pilot holes. Secure the Rear Belt Cover in place using Wood Screws (9h).

OPERATION

Caution: To properly break-in your new sewing machine, and avoid possible damage to the machine, sew at

moderate to slow speeds for the first 15 minutes of use.

WARNING: Shut the machine off **completely** before working around the needle or other moving parts.

BASIC SETTINGS

You will need to make the following adjustments on a regular basis when using the machine.

Attaching the Needle

The needles supplied with the Sewing Machine are size 90/14 (DBX1). The shank is size 16 x 257. For leatherwork use a 16 x 95 needle. This machine can accommodate a needle up to size 22.

Note: Industrial sewing machine needles have a round shank (the top part of the needle that slides up into the machine). Do not use needles, such as most home sewing needles, which have a flat area on the shank of the needle.

1. Unplug the Power Cord.
2. Select the proper needle size for the thread count and material being sewn.
3. Turn the Hand Wheel (7b) counterclockwise until the Needle Bar reaches the highest point of its stroke.

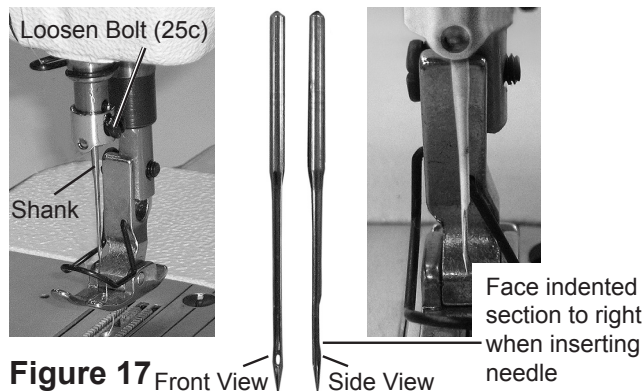


Figure 17 Front View Side View

4. Loosen the Bolt (25c) and hold Needle (23c) with its indented part facing to the

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SKU 3914

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right. Insert the Needle and push it up until it will go no farther.

5. While holding in place, securely tighten the Bolt.

Bobbin Winder Operation

The Bobbin Winder is used to wind thread onto the Bobbin. The Bobbin Winder has two positions, 'ON' and 'OFF':

OFF Position

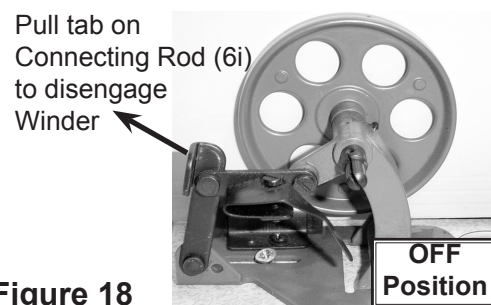


Figure 18

Pull the tab on the Connecting Rod (6i) to disengage the Winder from the Belt. The Bobbin Winder will not contact the belt.

ON Position



Figure 19

This position is with the Connecting Rod (6i) pressed, as shown above. The Shaft on the Bobbin Winder will spin, winding thread onto the Bobbin.

Winding Thread Onto the Bobbin

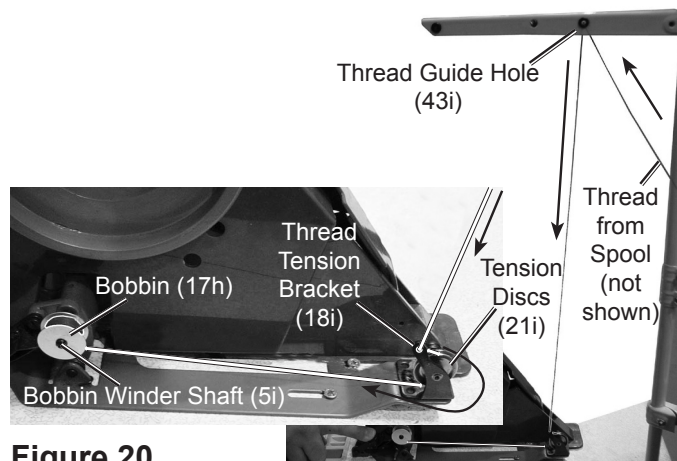


Figure 20

1. Route the Thread from the Spool, up through the Thread Guide Hole (43i), through the hole in the Thread Tension Bracket (18i), then over and under between the Tension Discs (21i).
2. Wrap the thread end around the Bobbin (17h), overlapping it several times to secure the thread on the bobbin.
3. Place the Bobbin onto the Bobbin Winder Shaft (5i) with the thread coming from underneath (See Figure 20). If needed, use the large Screw Driver (14h) or a pair of pliers (sold separately) to open or close the end of the Shaft so the Bobbin is snug enough to turn with the Shaft, yet can still be pulled off easily.
4. Turn on power to the Sewing Machine, press the Treadle Pedal, then the Connecting Rod (6i) to engage the Bobbin Winder and wind thread onto the Bobbin. When finished, release the Connecting Rod, the Treadle Pedal and turn off power to the Sewing Machine. Cut the thread and remove the Bobbin.

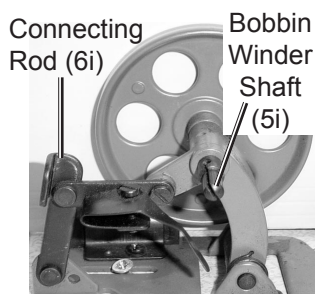


Figure 21

Setting the Bobbin into the Bobbin Case and into the Machine

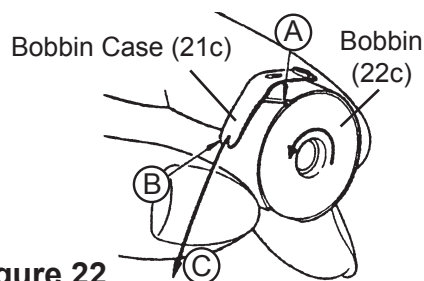


Figure 22

1. After filling the Bobbin (22c) with thread, hold it so that the thread exits to the left, and push it into the Bobbin Case (21c).
2. Following Figure 22, feed the thread through slit "A" and pull the thread in direction "C". By doing so, the thread will pass under the tension spring and exit at notch "B".
3. Verify that the Bobbin rotates in the direction of the arrow when thread "C" is pulled.
4. Pull out at least 4" of thread.
5. On the top of the machine, rotate the Hand Wheel counterclockwise until the needle is in its topmost position.

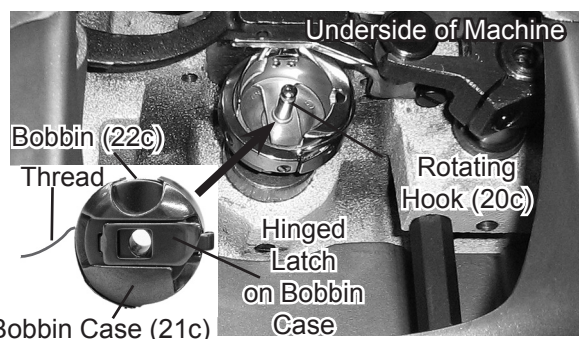


Figure 23

6. Holding the Bobbin Case by the hinged latch, insert the Bobbin Case into the Rotating Hook (20c) from the underside of the machine.
7. Release the hinged latch as the Bobbin Case slides into place.

Threading the Top Thread

Set the spool of thread (sold separately) onto the top thread Spool Pin (40i), and thread it through the eyelet directly above on the Thread Hanger (28i). Guide the thread through the machine, following the steps and photos below.

Note: There are two Spool Pins (40i). The left Pin is commonly used to hold the spool of thread for the top thread (the thread that passes through the top section of the machine), while the right Pin is used to hold the spool of thread that is used for winding the bobbin.

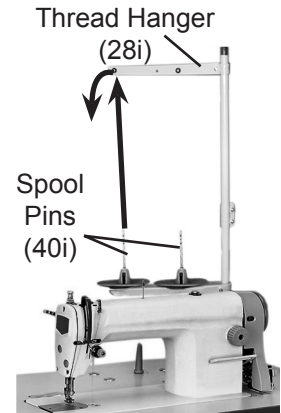


Figure 24

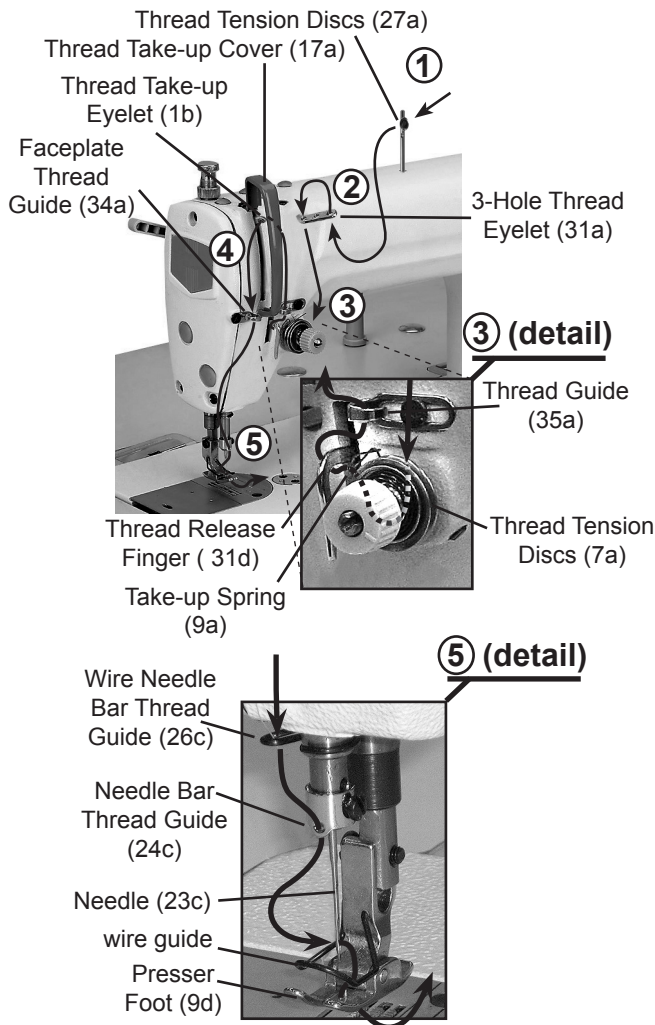


Figure 25

1. Pass the thread between the two Thread Tension Discs (27a) on the top of the machine.
2. Pass the thread up through the right eyelet then down through the left eyelet on the 3-Hole Thread Eyelet (31a).
3. Pass the thread between the two Thread Tension Discs (7a) pulling to the right until the thread catches in the Take-up Spring (9a). Then pass under the Thread Release Finger (31d) and behind the Thread Guide (35a).
4. Pass behind the Thread Take-up Cover (17a), through the Thread Take-up Eyelet (1b) from right to left, and down through the Faceplate Thread Guide (34a).
5. Pass the thread into the Wire Needle Bar Thread Guide (26c), through the hole in the Needle Bar Thread Guide (24c), through the Needle (23c) from left to right, under the wire guide and between the opening in the Presser Foot (9d).
6. To pull the bobbin thread up to the top of the machine, hold the top thread behind the Presser foot and turn the Hand Wheel (7b) counterclockwise until the Needle catches the bobbin thread,

pulling it to the top of the machine. Pull both threads behind the Presser Foot, leaving at least 4" of excess thread.

Adjusting the Stitch Length

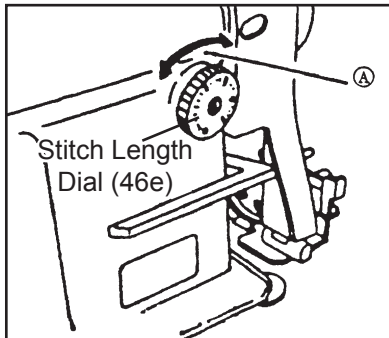


Figure 26

To increase or decrease the stitch length, turn the Stitch Length Dial (46e) to the desired number (in millimeters) as indicated at (A) above.

Adjusting the Needle Thread Tension

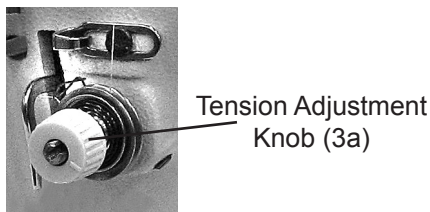


Figure 27

1. Turn Tension Adjustment Knob (3a) clockwise to increase thread tension.
2. Turn Tension Adjustment Knob counterclockwise to decrease thread tension.

Adjusting the Bobbin Thread Tension

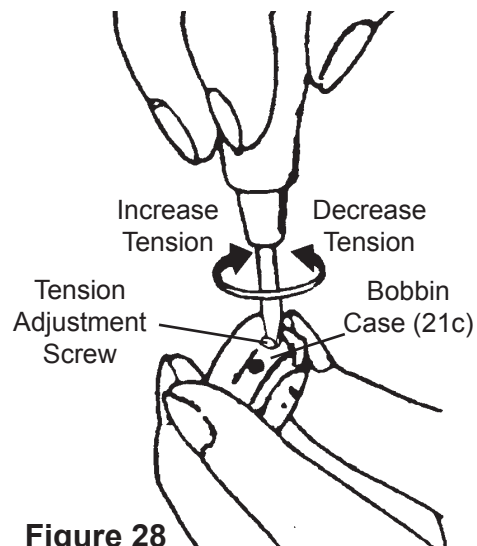


Figure 28

1. Using a small flathead screwdriver (sold separately), turn the Tension Adjustment Screw on the Bobbin Case (21c) clockwise to increase bobbin tension.
2. Turn the Tension Adjustment Screw counterclockwise to decrease bobbin tension.

Raising the Presser Foot

The Presser Foot (9d) can be raised and lowered using the Presser Foot Lever (18d) or the Knee Lifter (21g). The Knee Lifter raises the Presser Foot momentarily (to a height of up to 1/2"), as long as it is pushed, while the Presser Foot stays in the raised or lowered position when using the Presser Foot Lever.

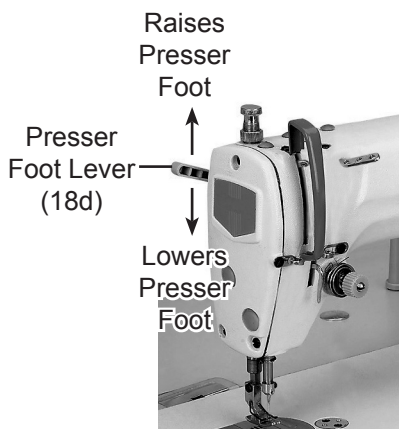


Figure 29

1. To raise the Presser Foot, turn the Presser Foot Lever up. The Presser Foot will go up about 1/4" and stop.
2. To lower the Presser Foot, turn the Presser Foot Lever down.

Setting the Presser Foot Pressure

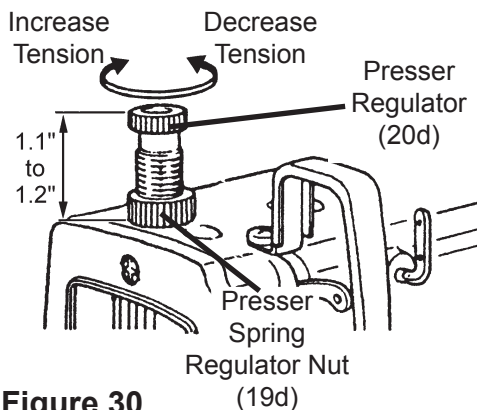


Figure 30

1. Loosen the Presser Spring Regulator Nut (19d) by turning it counterclockwise.
2. Turn the Presser Regulator (20d) clockwise to increase Presser Foot pressure and counterclockwise to decrease Presser Foot pressure.
3. After adjustment, tighten the Presser Spring Regulator Nut.

ADVANCED SETTINGS

The Sewing Machine is set at the factory for using with jean weight materials. The following adjustments are needed only when using the machine for unusual types of fabric or when changing machine components. These procedures should be performed only by a qualified sewing machine technician.

Adjusting the Feed Timing

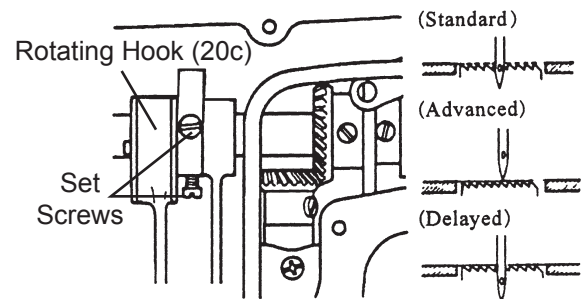


Figure 31

1. Loosen Set Screws on the side of the Rotating Hook (20c) and re-position the Rotating Hook as follows:
 - a. To advance the feed timing in order to prevent uneven material feed, rotate the Rotating Hook up (clockwise).
 - b. To delay the feed timing in order to increase stitch tightness, rotate the Rotating Hook down (counterclockwise).
2. Retighten the Set Screws.

Adjusting Feed Dog Height

The Feed Dog is factory adjusted so that it juts out from the Throat Plate surface .031" (0.8 mm) to .035" (0.9 mm). If the Feed Dog juts out too much, puckering may result when sewing lightweight materials. To adjust the height of the Feed Dog:

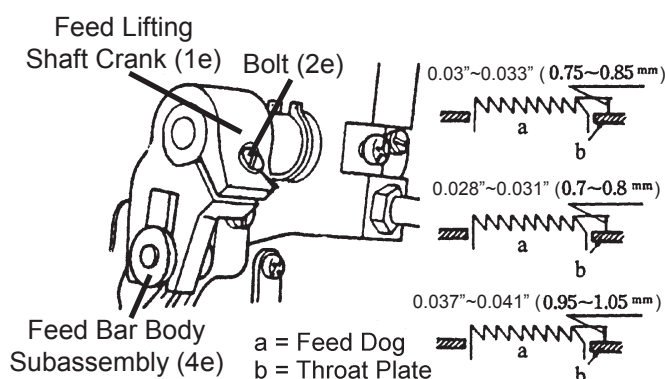


Figure 32

1. Loosen the Bolt (2e) of the Feed Lifting Shaft Crank (1e).
2. Move the Feed Bar Body Subassembly (4e) up or down to make the adjustment.
3. Tighten the Bolt (2e), being careful not to overtighten.

Adjusting Needle-to-hook Timing

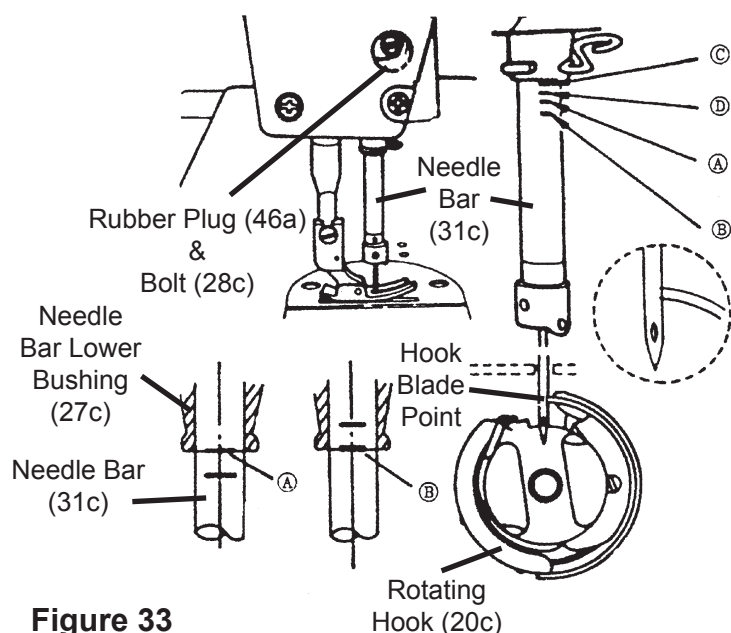


Figure 33

1. Turn the Hand Wheel (7b) to bring the Needle Bar down to the lowest point of its stroke.
2. Remove and set aside the Rubber Plug (46a). Loosen the Bolt (28c).

3. When using a DBX1 needle, align to marker line "A" on the Needle Bar (31c) with the bottom end of the Needle Bar Lower Bushing (27c), then tighten Bolt (28c).

When using a DAX1 needle, align to marker line "B" on the Needle Bar (31c) with the bottom end of the Needle Bar Lower Bushing (27c), then tighten the Bolt (28c).

4. When using a DBX1 needle, loosen Rotating Hook (20c) Set Screws, turn the Hand Wheel, and align the marker line "B" on the Needle Bar (31c) with the bottom end of the Needle Bar Lower Bushing (27c).

When using a DAX1 needle, align the marker line "D" on the Needle Bar (31c) with the bottom end of the Needle Bar Lower Bushing (27c).

5. After making the adjustments in steps 3 and 4, align the Hook Blade Point on the Rotating Hook (20c) with the center of the Needle.

Provide a clearance of .001" to .004" (0.04 to 0.1 mm) between the Needle and the Hook Blade Point. This clearance is less than 1/64" (almost touching). Securely tighten the Set Screws on the Rotating Hook. If the clearance is too small, the tip of the Hook Blade Point will be abraded. If it is too large, it will lead to skipped stitches.

Adjusting the Presser Bar Height

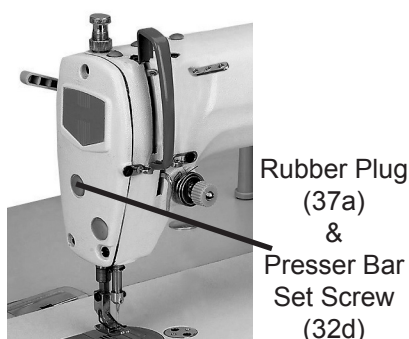


Figure 34

1. Remove and set aside the Rubber Plug (37a), and loosen the Presser Bar Set Screw (32d).
2. Manually adjust the Presser Bar height, and the angle of the Presser Foot.
3. After adjusting, securely tighten the Set Screw and replace the Rubber Plug.

Adjusting the Thread Take-up Stroke

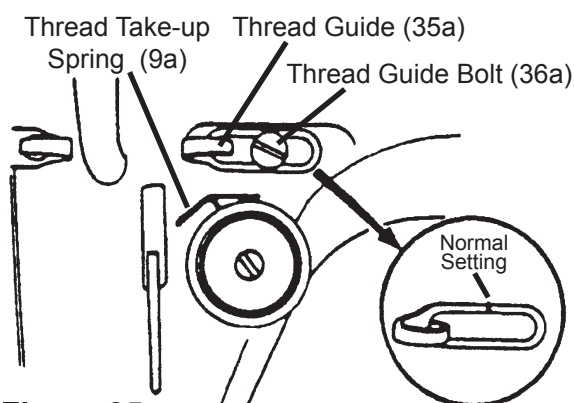


Figure 35

1. To adjust the thread take-up stroke, loosen the Thread Guide Bolt (36a) and slide the Thread Guide (35a) to the right or left as described following:
 - a. When sewing heavy weight materials, move the Thread Guide (35a) to the left to increase the length of thread pulled out by the Thread Take-up Spring (9a).
 - b. When sewing lightweight materials, move the Thread Guide (35a) to the right to decrease the length of thread

pulled out by the Thread Take-up Spring.

- c. The normal setting is when the marker on the Thread Guide is aligned with the center of the Bolt.

2. Tighten the Thread Guide Bolt after adjusting the Thread Guide.

Adjusting the Height of the Knee Lifter

The standard height of the Presser Foot lifted using the Knee Lifter is 0.39 inch (10 mm).

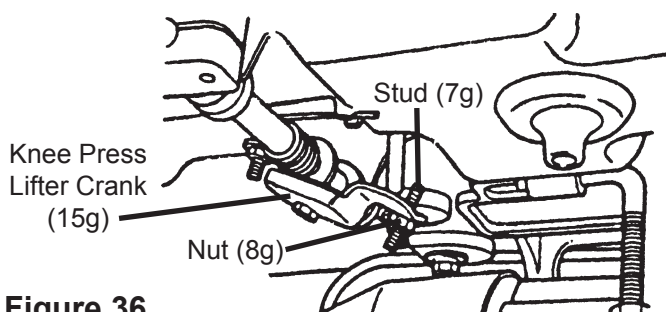


Figure 36

1. To adjust the Presser Foot lift up to 0.5 inch (13 mm), adjust the Nut (8g) placement on the Stud (7g), on the Knee Press Lifter Crank (15g).

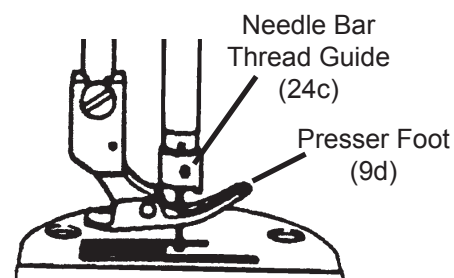


Figure 37

2. When the Presser Foot lift is adjusted over 0.39 inch (10 mm), be sure that the Needle Bar Thread Guide (24c) does not hit the Presser Foot (9d). This can be manually checked by turning the Hand Wheel (7b).

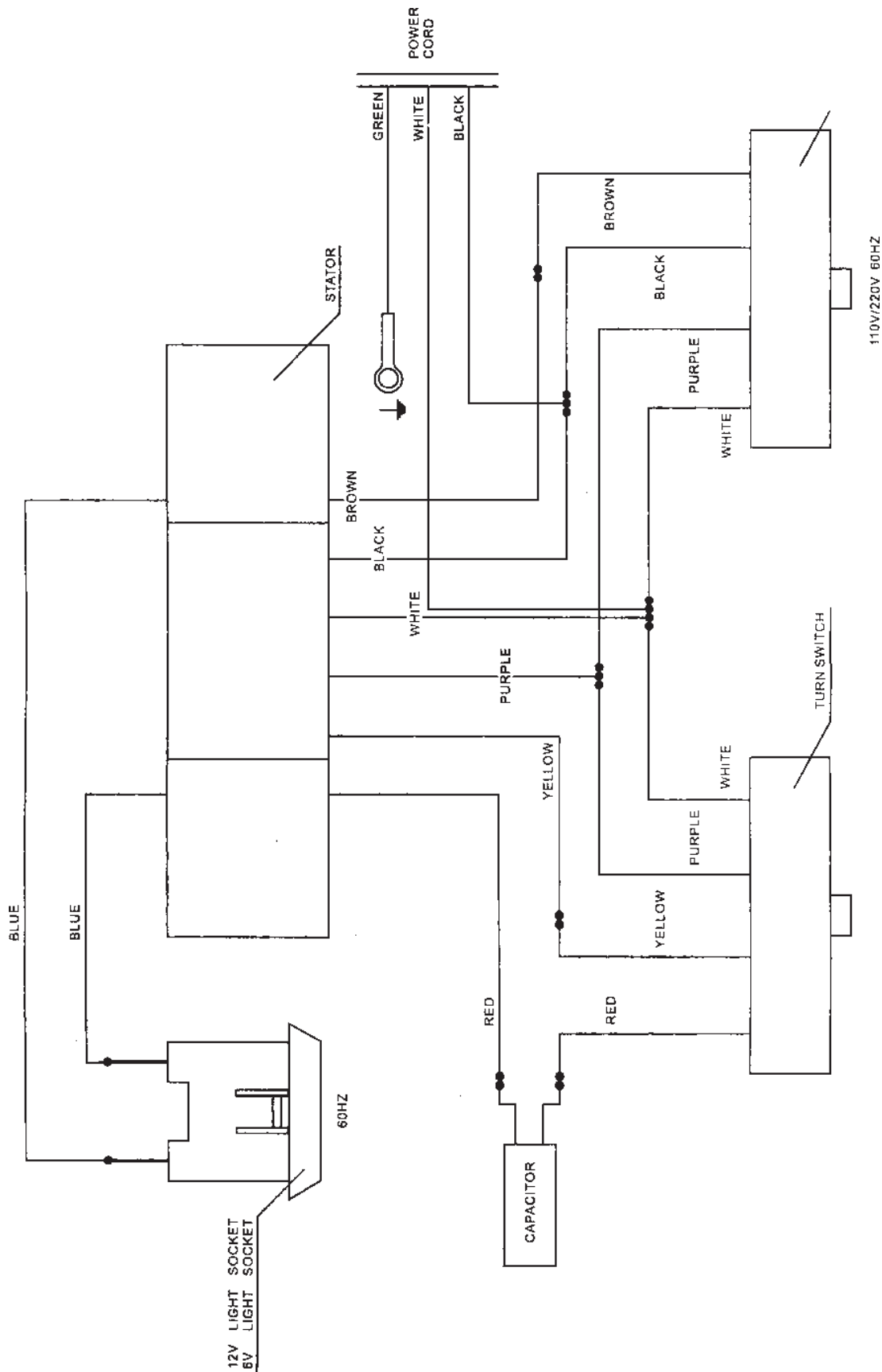
Adjusting Sewing Speed with Pulleys (sold separately)

This machine is a fast running machine. It can be adjusted to a slower running machine by changing the pulley on the motor to a smaller diameter pulley. Consult a qualified sewing machine repair shop to replace the pulley with a 1-3/4" or 1-1/2" pulley to slow the speed of the machine.

MAINTENANCE

1. Advanced Machine adjustments should only be performed by a qualified technician.
2. Check the oil level weekly when the machine is used daily. Add sewing machine oil as required to the high level marking.
3. Clean the machine with a clean, damp cloth. Do not use solvents or thinners.
4. After each use, check for lint build up and blow clean with pressurized air. Remove and discard any stray thread or fabric pieces.
5. Check the Belt (71j) tension after first use and then weekly, and adjust as described in **Adjusting the Belt Tension** under the assembly instructions.
6. When not in use, cover the machine and store in a clean and dry location.

MOTOR WIRING DIAGRAM



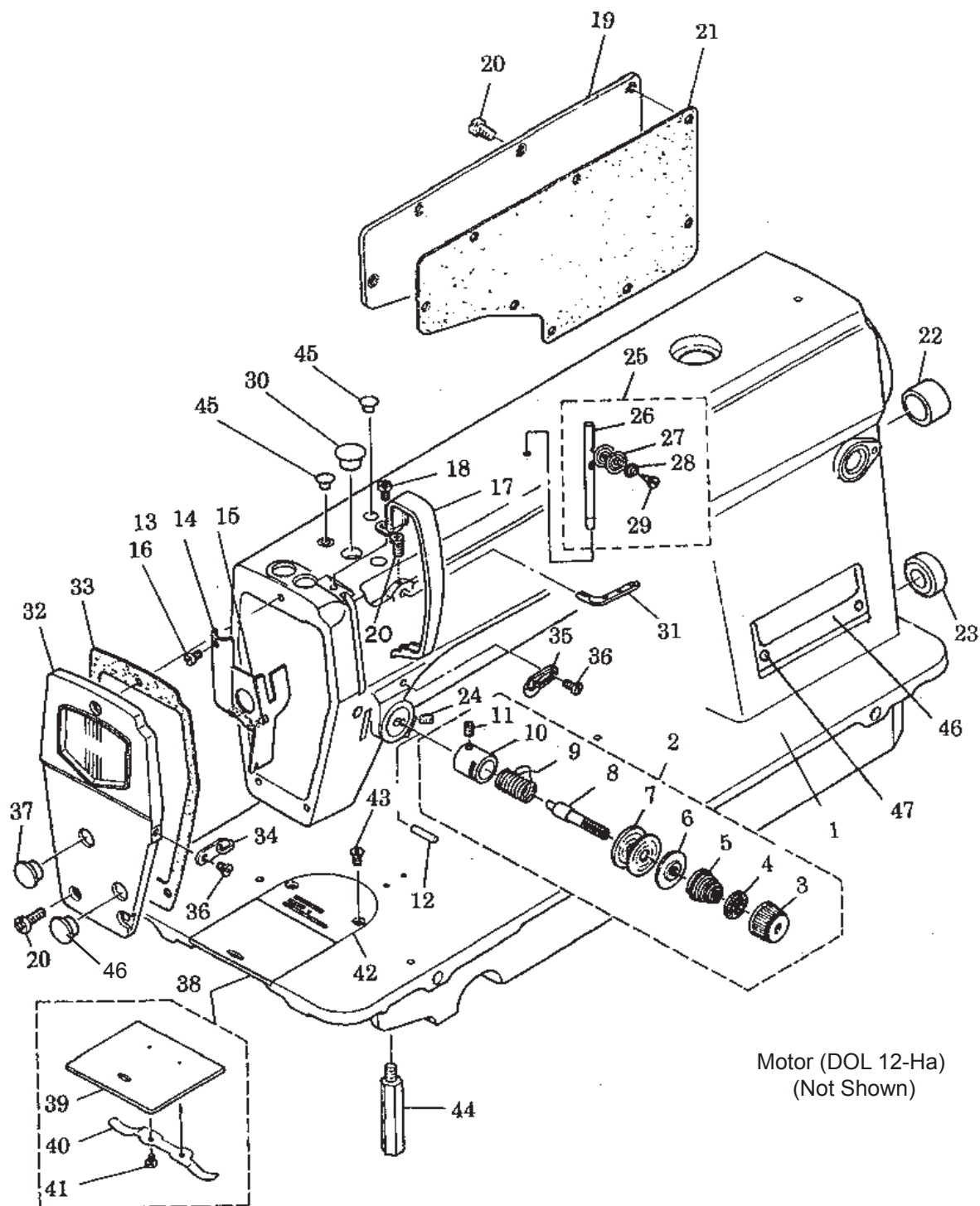
A - ARM BED PARTS LIST

Part	Description	Qty	Part	Description	Qty
1a	Arm Bed Assembly	1	30a	Rubber Plug Needle Draining Crank Hole	1
2a	Tension Complete Subassembly	1	31a	Three-hole Thread Eyelet	1
3a	Tension Adjustment Knob	1	32a	Faceplate	1
4a	Thread Disc Rotation Stopper	1	33a	Faceplate Sealing Gasket	1
5a	Thread Tension Spring	1	34a	Faceplate Thread Guide	1
6a	Thread Release Disc	1	35a	Thread Guide	1
7a	Thread Tension Disc	2	36a	Thread Guide Bolt	2
8a	Tension Screw	1	37a	Rubber Plug	2
9a	Take-up Spring	1	38a	Bed Slide Subassembly	1
10a	Thread Tension Post Socket	1	39a	Slide Plate	1
11a	Set Screw	1	40a	Slide Plate Spring	1
12a	Tension Release Pin	1	41a	Slide Plate Spring Screw	2
13a	Oil Packing Subassembly	1	42a	Throat Plate	1
14a	Oil Packing Cover	1	43a	Throat Plate Screw	2
15a	Oil Wick	1	44a	Bed Screw Stud	4
16a	Screw	1	45a	Rubber Plug Thread Take-up Lever Link Pin Hole	2
17a	Thread Take-up Cover	1	46a	Rubber Plug	1
18a	Take-up Lever Cover Screw	1	47a	Brand Plate	1
19a	Faceplate Asm	1	48a	Brand Plate Rivet	2
20a	Screw	8	49a	Main Shaft Bushing	1
21a	Gasket	1	50a	Connecting Rod	1
22a	Rubber Plug	1	51a	Screw	2
23a	Rubber Plug	1	DOL 12-Ha	Motor (Not Shown)	1
24a	Thread Tension Screw	1	FESM-400a	Servo motor (Slower replacement for stock motor, not shown, optional)	
25a	Faceplate Thread Retaining Guide Subassembly	1			
26a	Faceplate Retaining Thread Guide	1			
27a	Thread Tension Disc	2			
28a	Thread Tension Spring	1			
29a	Thread Tension Screw	1			

Note: When ordering parts for this component use the suffix “a”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

A- ARM BED ASSEMBLY DRAWING



B - MAIN SHAFT PARTS LIST

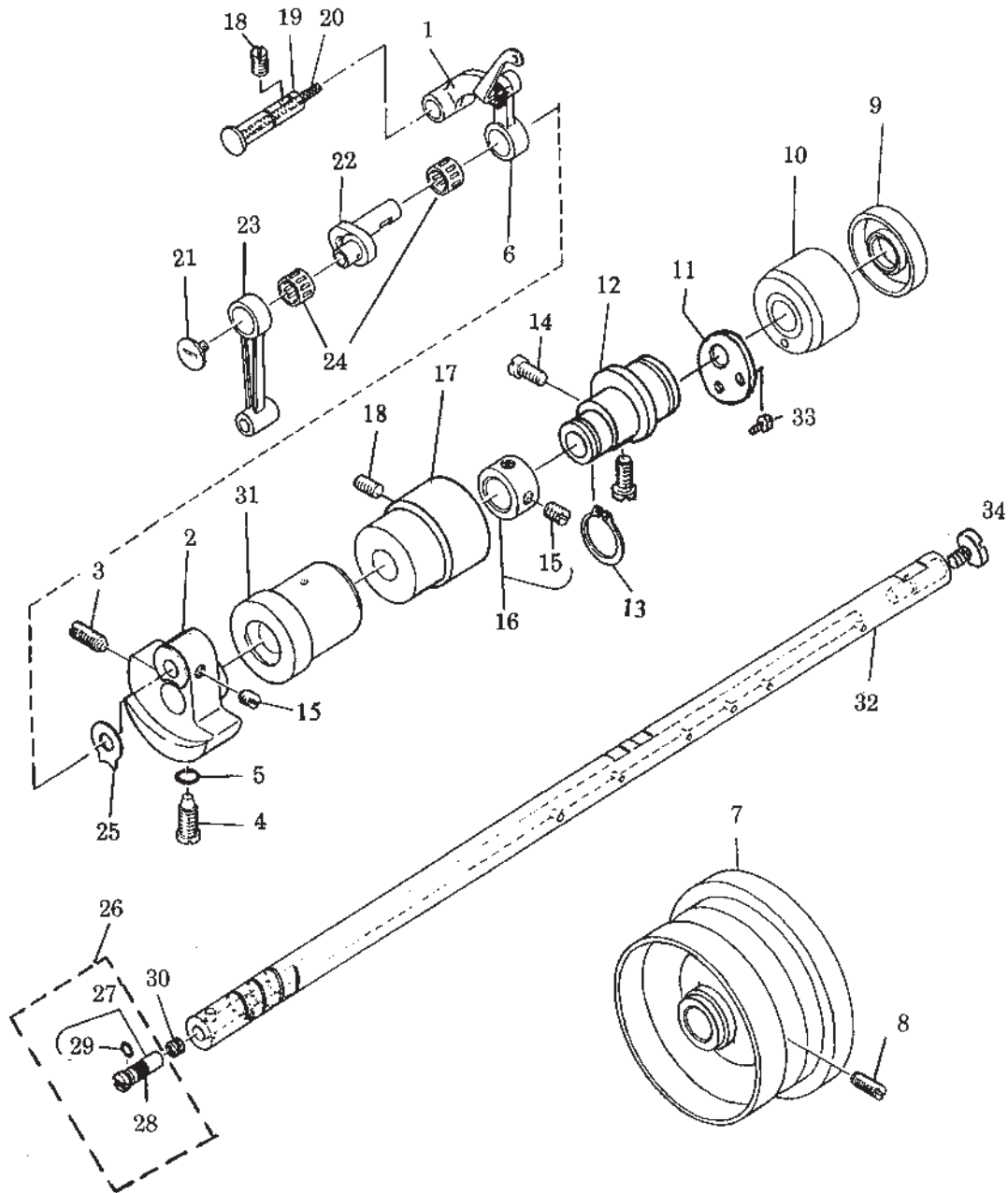
Part	Description	Qty	Part	Description	Qty
1b	Thread Take-up Eyelet	1	18b	Set Screw	1
2b	Needle Bar Crank	1	19b	Thread Take-up Lever Link Pin	1
3b	Set Screw	1	20b	Oil Wick	1
4b	Bolt	1	21b	End Bolt (left hand)	1
5b	O-Ring	1	22b	Thread Take-up Crank	1
6b	Thread Take-up Lever Link	1	23b	Needle Bar Crank Connecting Rod Sub-assembly	1
7b	Hand Wheel	1	24b	Needle Bearing	1
8b	Set Screw	2	25b	Needle Bar Crank Wearing Plate	1
9b	Sealing Ring	1	26b	Crank Oil Adjusting Sub-assembly	1
10b	Main Shaft Rear Bushing Sub-assembly	1	27b	Crank Oil Adjusting Sub-assembly	1
11b	Plate	1	28b	Rubber Bushing	1
12b	Feed Drive Cam	1	29b	O-Ring	1
13b	Snap Ring	1	30b	Main Shaft Felt	1
14b	Bolt	2	31b	Main Shaft Front Bushing Sub-assembly	1
15b	Set Screw	2	32b	Main Shaft	1
16b	Main Shaft Thrust Collar	1	33b	Bolt	2
17b	Main Shaft Middle Bushing	1	34b	Bolt	1

Note: When ordering parts for this component use the suffix “b”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

REV 10b

B - MAIN SHAFT ASSEMBLY DRAWING



C- STITCH DRIVE PARTS LIST

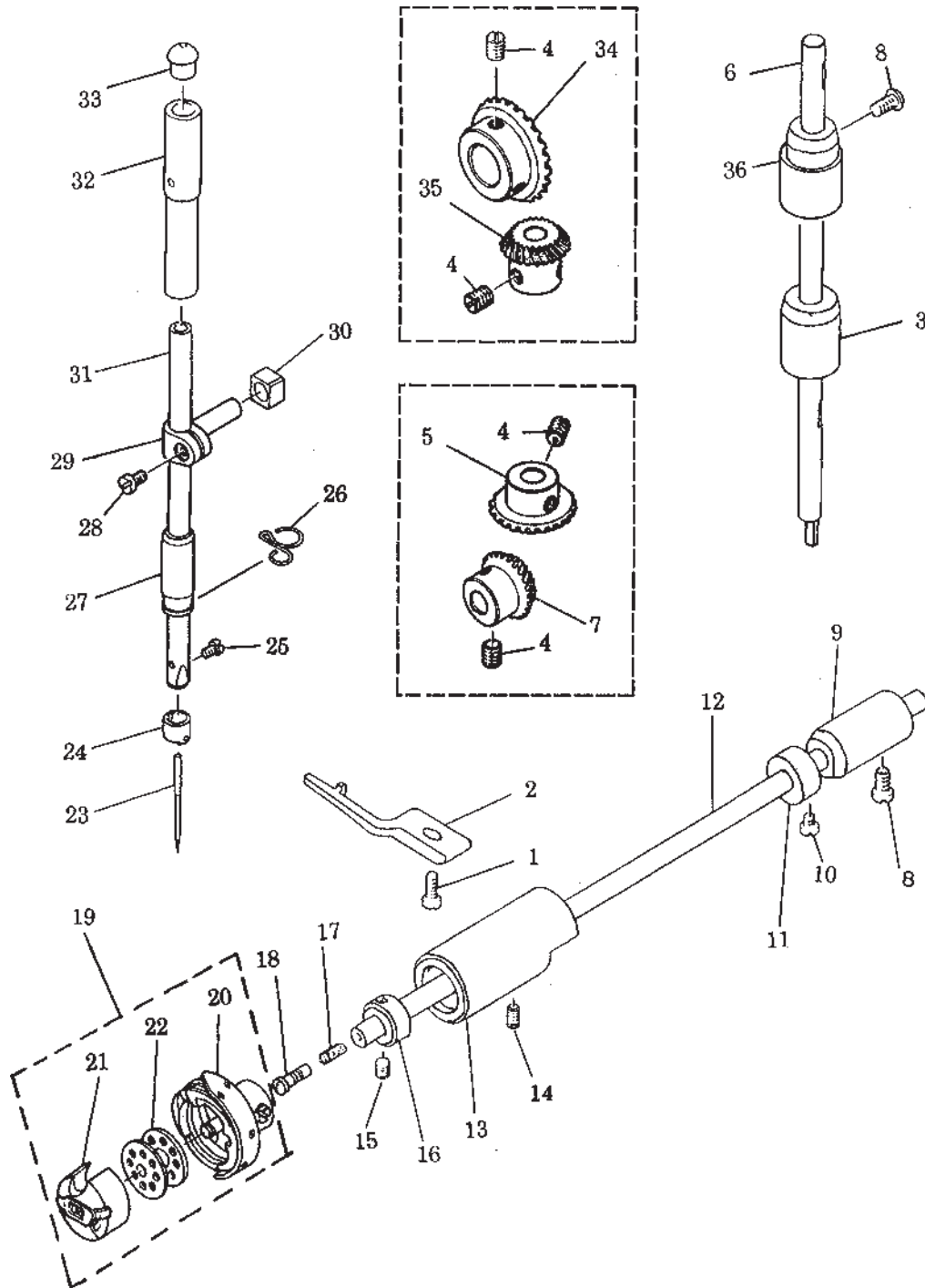
Part	Description	Qty	Part	Description	Qty
1c	Bolt	1	19c	Rotating Hook Sub-assembly	1
2c	Rotating Hook Positioning Finger	1	20c	Rotating Hook	1
3c	Upright Shaft Lower Bushing	1	21c	Bobbin Case	1
4c	Set Screw	8	22c	Bobbin	1
5c	Bevel Gear	1	23c	Needle	1
6c	Upright Shaft	1	24c	Needle Bar Thread Guide	1
7c	Bevel Pinion	1	25c	Bolt	1
8c	Bolt	2	26c	Wire Needle Bar Thread Guide	1
9c	Hook Driving Shaft Rear Bushing	1	27c	Needle Bar Lower Bushing	1
10c	Bolt	2	28c	Bolt	1
11c	Hook Driving Shaft Thrust Collar	1	29c	Needle Bar Connecting Pin	1
12c	Hook Driving Shaft	1	30c	Needle Bar Guide Block	1
13c	Hook Driving Shaft Front Bushing Sub-assembly	1	31c	Needle Bar	1
14c	Set Screw	1	32c	Needle Bar Upper Bushing	1
15c	Set Screw	2	33c	Rubber Plug	1
16c	Hook Driving Shaft Front Thrust Collar	1	34c	Bevel Gear	1
17c	Oil Wick	1	35c	Bevel Pinion	1
18c	Hook Driving Shaft Front Bolt	1	36c	Upright Shaft Upper Bushing	1

Note: When ordering parts for this component use the suffix “c”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

REV 10b

C - STITCH DRIVE ASSEMBLY DRAWING



D - PRESSER BAR PARTS LIST

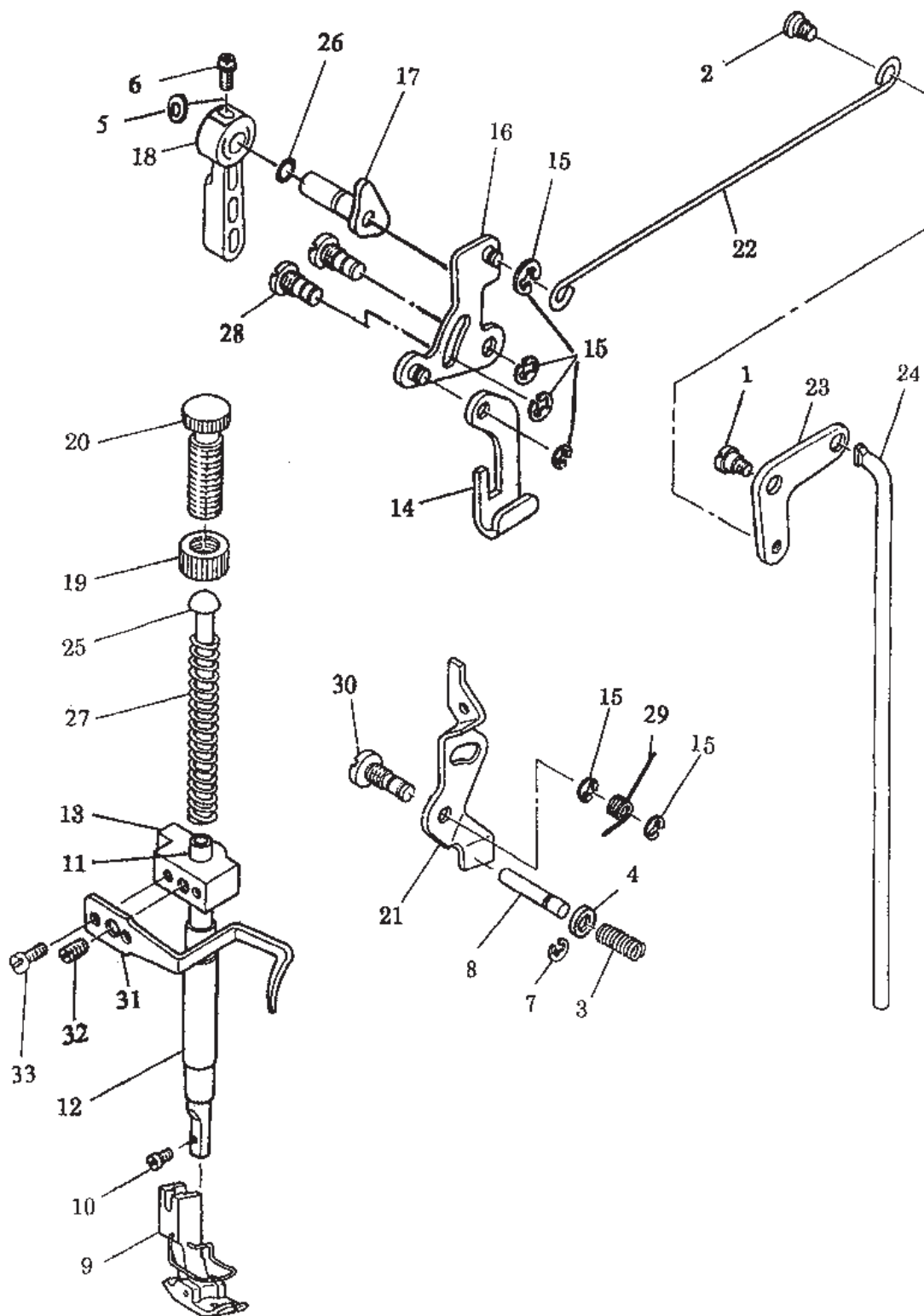
Part	Description	Qty	Part	Description	Qty
1d	Bolt	1	18d	Presser Foot Lever	1
2d	Bolt	1	19d	Presser Spring Regulator Nut	1
3d	Spring	1	20d	Presser Regulator	1
4d	Washer	1	21d	Tension Release Lever	1
5d	Washer	1	22d	Lifting Lever Presser Rod	1
6d	Bolt	1	23d	Lifting Lever Rear Crank	1
7d	Snap Ring	1	24d	Lifting Lever Presser Rod	1
8d	Pin	1	25d	Pressure Lever	1
9d	Presser Foot	1	26d	O-Ring	1
10d	Bolt	1	27d	Presser Spring	1
11d	Presser Bar	1	28d	Lifting Lever Shaft Hinge Bolt	2
12d	Presser Bar Bushing	1	29d	Spring	1
13d	Presser Bar Guide Bracket	1	30d	Hinge Bolt	1
14d	Lift Hook	1	31d	Thread Release Finger	1
15d	Spring	6	32d	Presser Bar Set Screw	1
16d	Connecting Rod Subassembly	1	33d	Bolt	2
17d	Hand Lifter Cam	1			

Note: When ordering parts for this component use the suffix “d”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

REV 10b

D - PRESSER BAR ASSEMBLY DRAWING



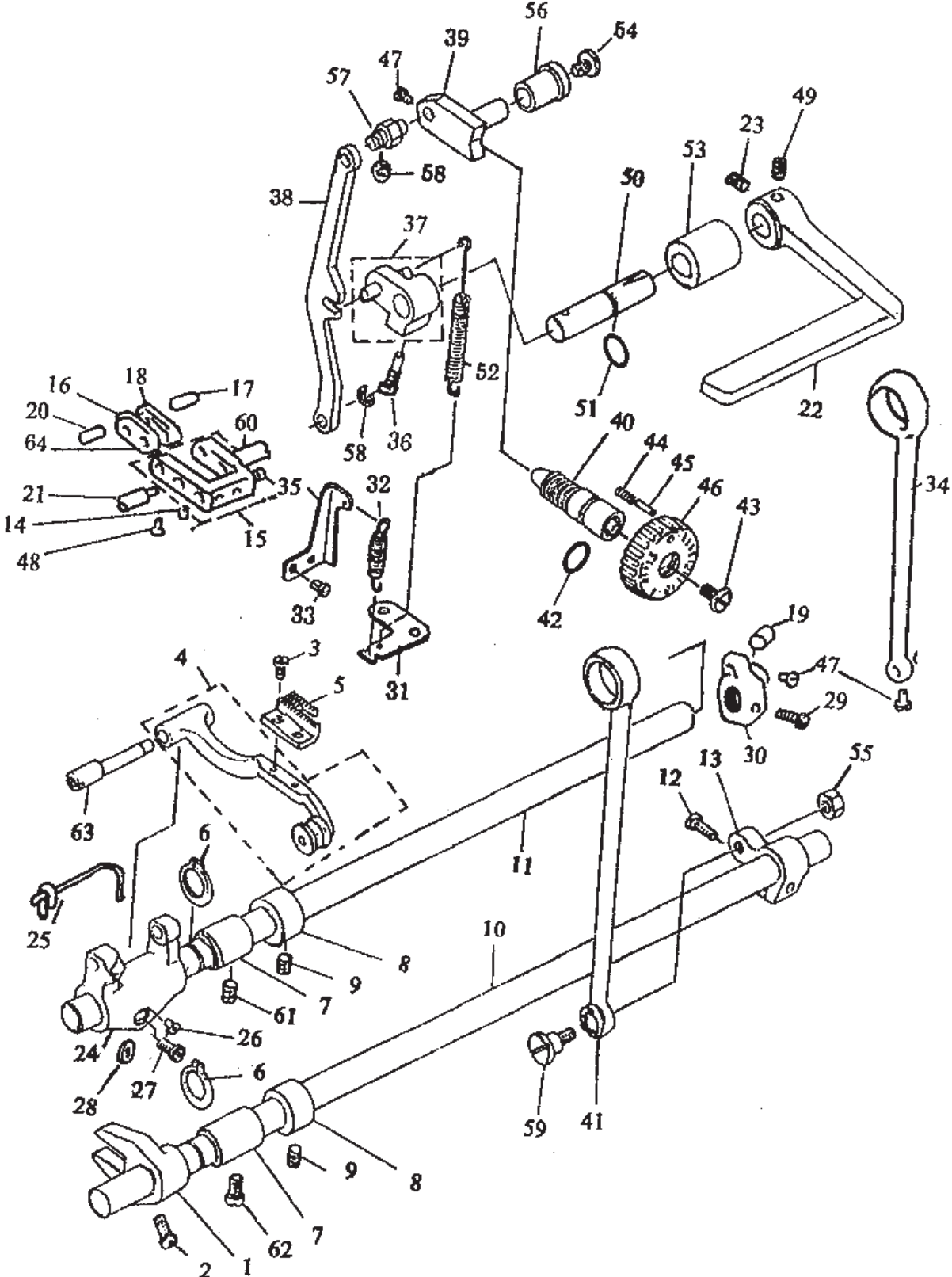
E - FEED CONTROL PARTS LIST

Part	Description	Qty	Part	Description	Qty
1e	Feed Lifting Shaft Crank	1	33e	Bolt	1
2e	Bolt	1	34e	Connecting Rod	1
3e	Bolt	1	35e	Rocker Slate Return Board	1
4e	Feed Bar Body Subassembly	1	36e	Bolt	1
5e	Feed Dog	1	37e	Reverse Crank Subassembly	1
6e	Snap Ring	1	38e	Connecting Rod	1
7e	Bushing	1	39e	Feed Regulator	1
8e	Thrust Collar	1	40e	Feed Regulator Stud	1
9e	Set Screw	1	41e	Connecting Rod	1
10e	Feed Drive Shaft	1	42e	O-Ring	1
11e	Feed Rocker Shaft	1	43e	Bolt	1
12e	Bolt	1	44e	Lock Pin Spring	1
13e	Feed Drive Shaft Crank	1	45e	Lock Pin	1
14e	Set Screw	1	46e	Stitch Length Dial	1
15e	Feed Drive Rocker Slate Subassembly	1	47e	Bolt	1
16e	Shorter Feed Driving Rocker Slate	1	48e	Bolt	1
17e	Connecting Pin	1	49e	Set Screw	1
18e	Rocker Slate	1	50e	Feed Reverse Shaft	1
19e	Pin	1	51e	O-Ring	1
20e	Connecting Pin	1	52e	Feed Reverse Spring	1
21e	Pin	1	53e	Bushing	1
22e	Reverse Control Lever	1	54e	Bolt	1
23e	Set Screw	1	55e	Nut	1
24e	Feed Rocker	1	56e	Bushing	1
25e	Oil Wick	1	57e	Connecting Rod Pin	1
26e	Bolt	1	58e	Snap Ring	1
27e	Bolt	1	59e	Bolt	1
28e	Washer	1	60e	Rocker Slate Pin	1
29e	Bolt	1	61e	Set Screw	1
30e	Feed Crank	1	62e	Bolt	1
31e	Guide	1	63e	Feed Holder Shaft	1
32e	Spring	1			

Note: When ordering parts for this component use the suffix “e”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

E - FEED CONTROL ASSEMBLY DRAWING



F - LUBRICATION PARTS LIST

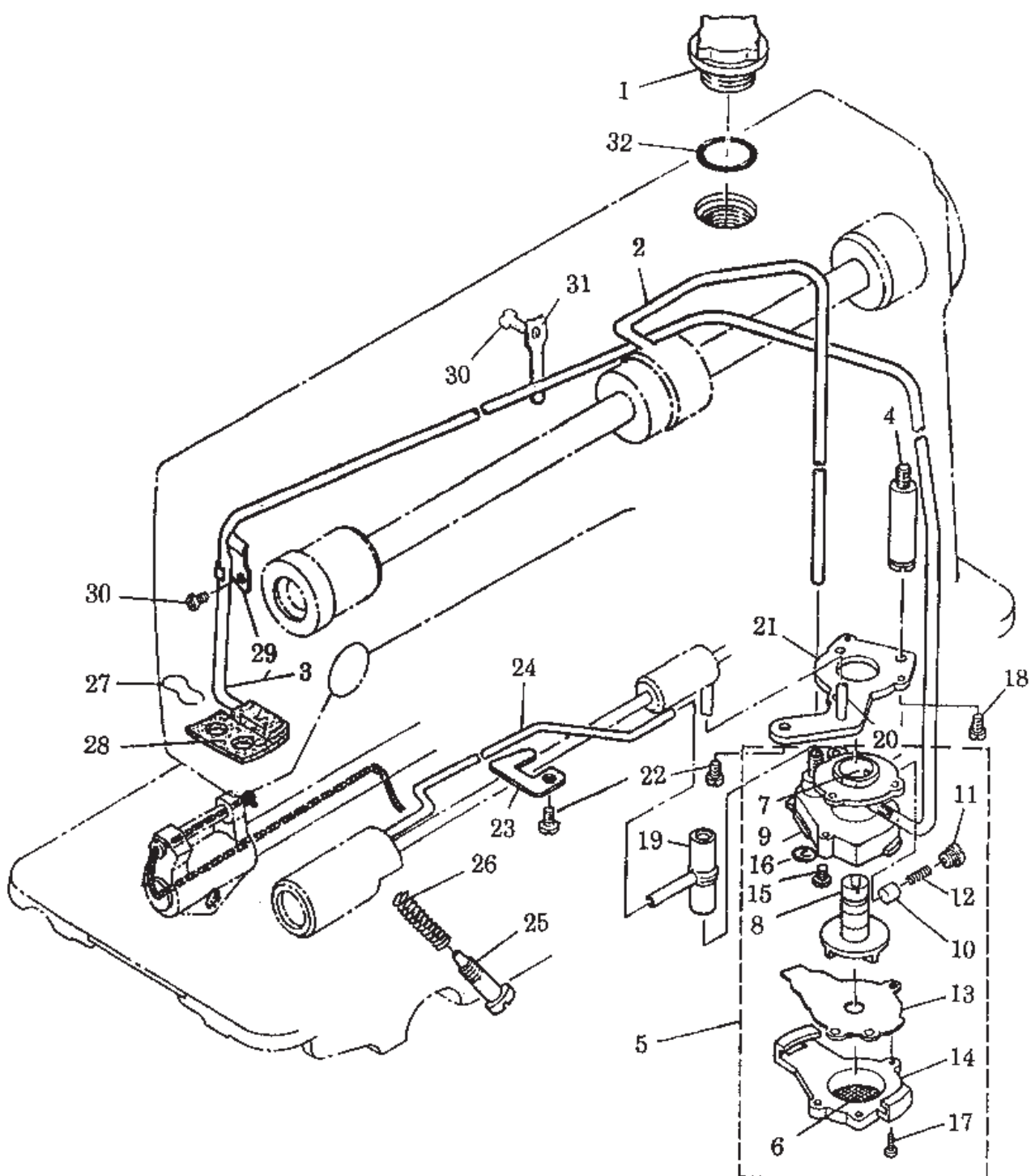
Part	Description	Qty	Part	Description	Qty
1f	Oil Sight Window	1	17f	Bolt	1
2f	Main Shaft Oil Tube	1	18f	Bolt	1
3f	Oil Return Tube Holder	1	19f	Oil Pump Throughway	1
4f	Oil Pump Installing Base	1	20f	Rubber Joint	1
5f	Lubrication Oil Pump Subassembly	1	21f	Oil Pump Brace	1
6f	Oil Pump Screen	1	22f	Bolt	1
7f	Bushing	1	23f	Gasket	1
8f	Impeller	1	24f	Oil Tube	1
9f	Lubrication Oil Pump	1	25f	Bolt	1
10f	Oil Return Pump Plunger	1	26f	Spring	1
11f	Bolt	1	27f	Oil Return Tube Holder	1
12f	Spring	1	28f	Oil Return Tube Plate	1
13f	Gasket	1	29f	Oil Return Tube Holder	1
14f	Cover	1	30f	Bolt	1
15f	Bolt	1	31f	Oil Return Clamp	1
16f	Washer	1	32f	O-Ring	1

Note: When ordering parts for this component use the suffix “f”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

REV 10b

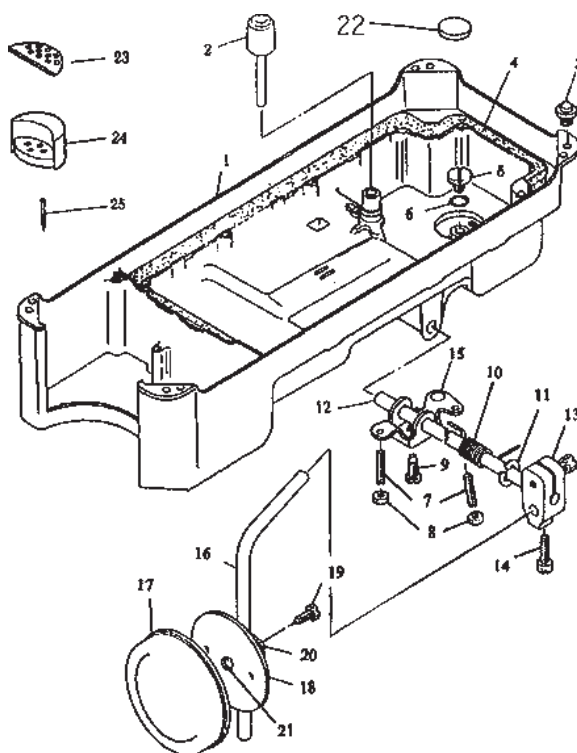
F - LUBRICATION ASSEMBLY DRAWING



G - BASE ASSEMBLY DRAWING AND PARTS LIST

Part	Description	Qty
1g	Oil Pan	1
2g	Knee Press Lifter Rod	1
3g	Rubber Cushion	4
4g	Gasket	1
5g	Bolt	1
6g	O-Ring	1
7g	Stud	2
8g	Nut	2
9g	Bolt	1
10g	Spring	1
11g	Snap Ring	1
12g	Knee Press Shaft	1
13g	Rubber Joint	1

Part	Description	Qty
14g	Bolt	2
15g	Knee Press Lifter Crank	1
16g	Knee Press Plate Rod	1
17g	Knee Press Plate Cover Joint	1
18g	Knee Press Plate	1
19g	Bolt	1
20g	Knee Lifter Tube Holder	1
21g	Knee Lifter	1
22g	Oil Pan Magnet	1
23g	Rubber Pad	2
24g	Rubber Cushion	2
25g	Tack	8



Note: When ordering parts for this component use the suffix “g”.

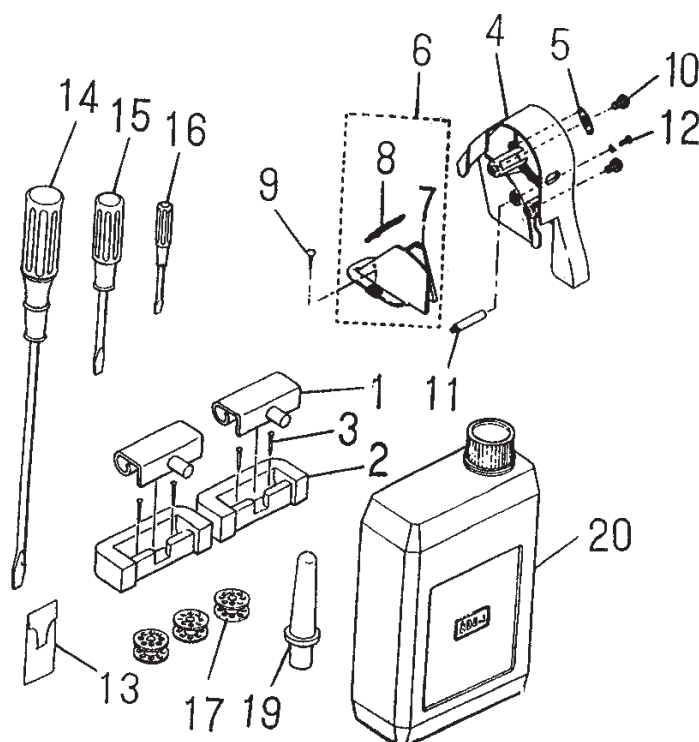
Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

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H - ACCESSORIES PARTS LIST AND ASSEMBLY DRAWING

Part	Description	Qty
1h	Hinge	2
2h	Hinge Cushion	2
3h	Tack	4
4h	Front Belt Cover	1
5h	Belt Cover Cap	1
6h	Rear Belt Cover Assembly	1
7h	Rear Belt Cover	1
8h	Rear Belt Cover Assembly	1
9h	Wood Screw	1
10h	Belt Cover Bolt	1

Part	Description	Qty
11h	Belt Cover Support	1
12h	Bolt	1
13h	Bolt	1
14h	Screwdriver (large)	1
15h	Screwdriver (medium)	1
16h	Screwdriver (small)	1
17h	Bobbin	3
19h	Machine Rest Pin	1
20h	Oil	1



Note: When ordering parts for this component use the suffix “h”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

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For technical questions, please call 1-800-444-3353.

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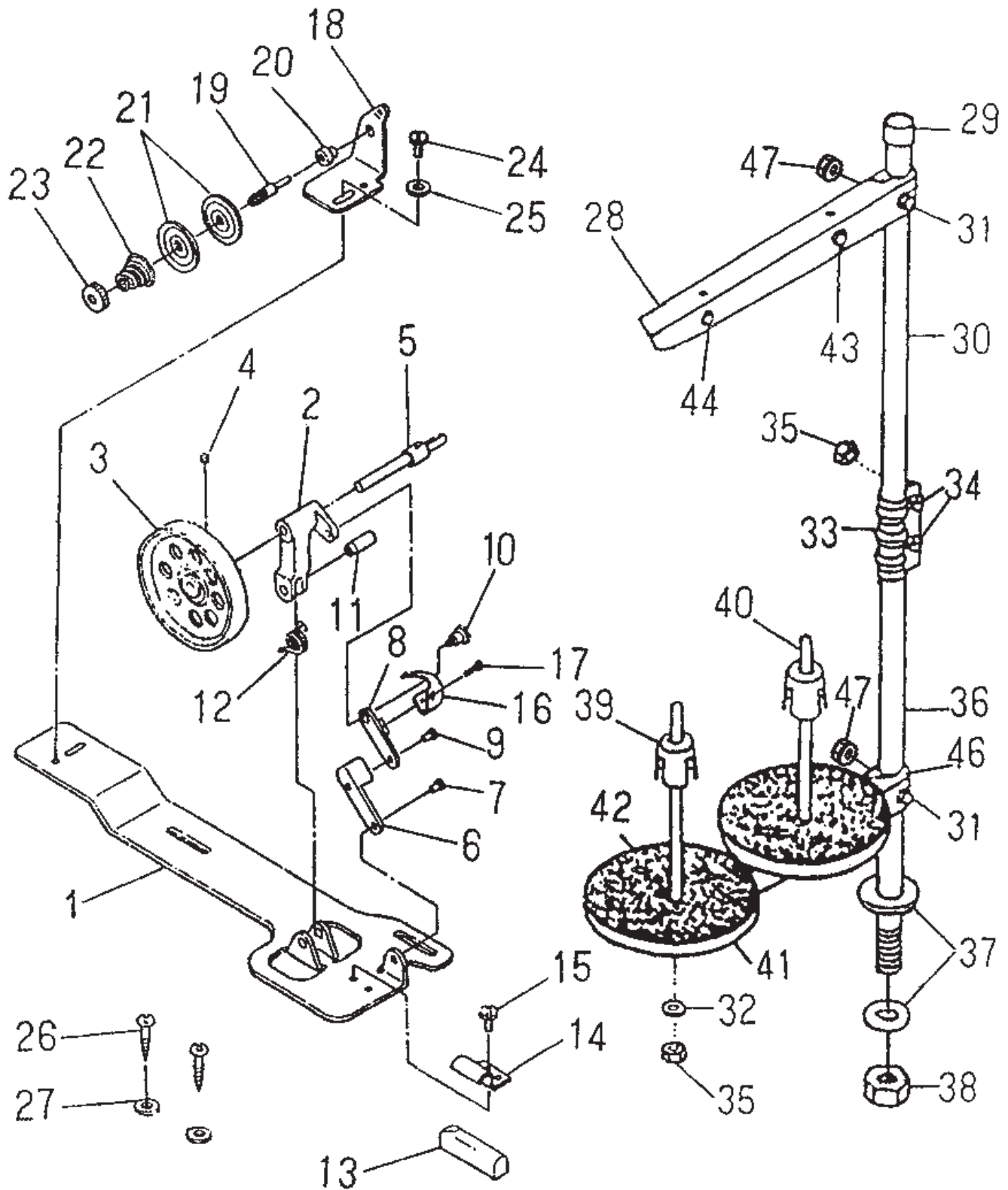
I - BOBBIN WINDER & THREAD STAND UNIT PARTS LIST

Part	Description	Qty	Part	Description	Qty
1i	Base	1	25i	Washer	1
2i	Thread Winder Base Assembly	1	26i	Wood Screw	2
3i	Wheel	1	27i	Washer	1
4i	Bolt	1	28i	Thread Hanger	1
5i	Bobbin Winder Shaft	1	29i	Column Cap	1
6i	Connecting Rod	1	30i	Upper Spool Rest Rod	1
7i	Connecting Rod Pin	1	31i	Bolt	1
8i	Bobbin Winder Frame Rod	1	32i	Washer	1
9i	Bobbin Winder Frame Pin	1	33i	Column Pipe Connector	1
10i	Bolt	1	34i	Bolt	2
11i	Bobbin Winder Frame Pin	1	35i	Nut	1
12i	Bobbin Winder Frame Spring	1	36i	Lower Spool Rest Rod	1
13i	Rubber Pad	1	37i	Washer	1
14i	Presser Plate	1	38i	Nut	1
15i	Bolt	1	39i	Spool Vibration Stopper	2
16i	Bobbin Winder Spring	1	40i	Spool Pin	2
17i	Hinge Bolt	1	41i	Spool Rest	2
18i	Thread Tension Bracket Assembly	1	42i	Spool Mat	2
19i	Bolt	1	43i	Thread Guide Hole	1
20i	Bobbin Winder Tension Disc Collar	1	44i	Thread Guide Hole	1
21i	Tension Disc	2	46i	Spool Support	1
22i	Tension Spring	1	47i	Nut	1
23i	Thread Tension Stud Nut	1			
24i	Bolt	1			

Note: When ordering parts for this component use the suffix “i”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

I - BOBBIN WINDER & THREAD STAND UNIT ASSEMBLY DRAWING



J - MOTOR PARTS LIST

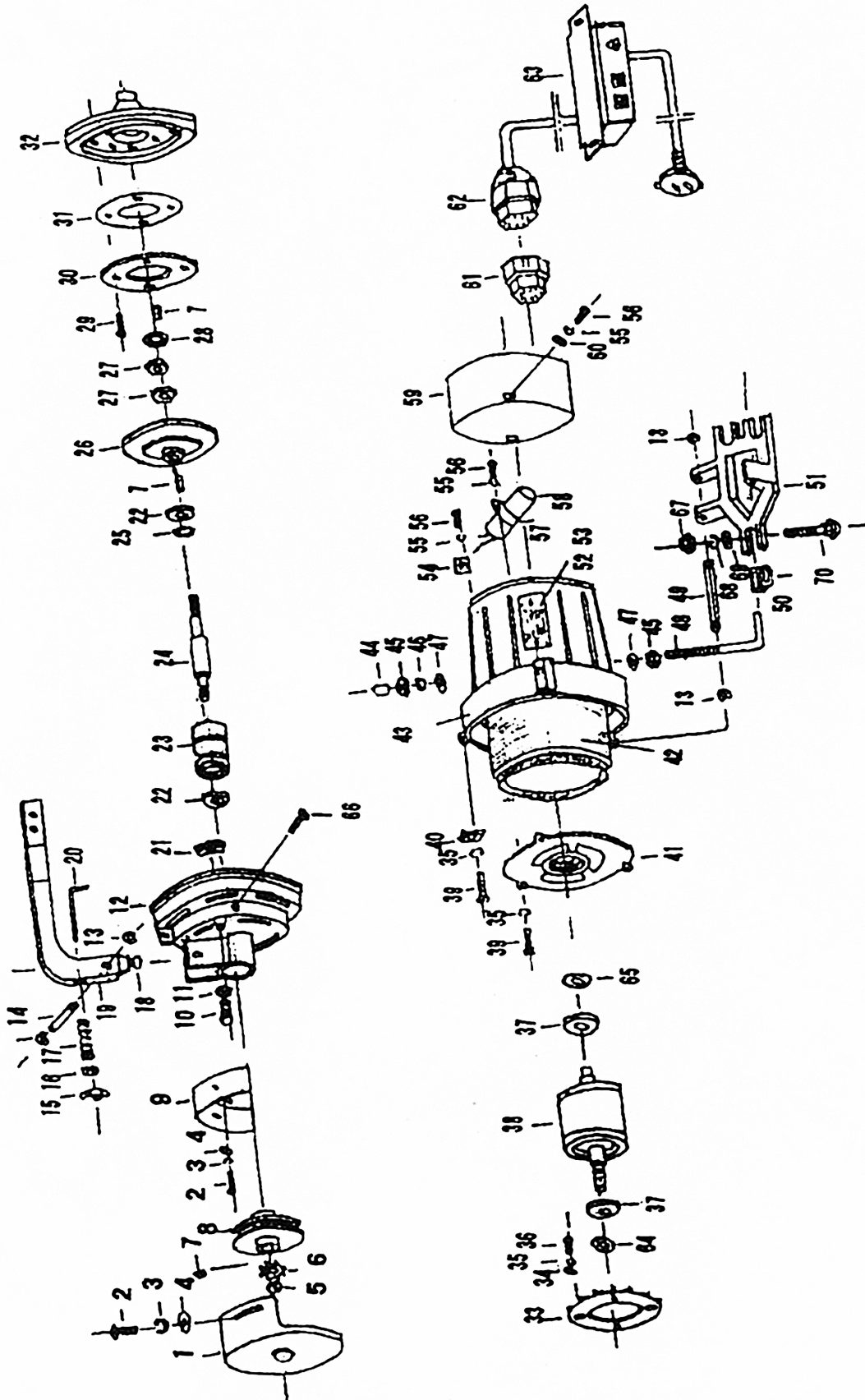
Part	Description	Qty	Part	Description	Qty
1j	Pulley Safety Cover	1	37j	Bearing 6203	1
2j	Bolt M5 x 10	1	38j	Rotor	1
3j	Spring Washer Ø5	1	39j	Bolt M6 x 15	1
4j	Flat Washer	1	40j	Lock Washer	1
5j	Nut M12	1	41j	Bearing Pressing Plate	1
6j	Gear Spring Washer Ø12	1	42j	Stator	1
7j	Set Screw 5 x 14	1	43j	Housing	1
8j	Pulley	1	44j	Plastic Cap	1
9j	Inner Cover	1	45j	Nut M10	2
10j	Bolt	1	46j	Spring Washer Ø10	2
11j	Lock Nut M10	1	47j	Flat Washer Ø10	2
12j	Bracket	1	48j	Belt Adjustment Bolt M10 x 140	1
13j	Stop Spring Ø9	1	49j	Mount Hinge Pin 10 x 84	1
14j	Arm Pin 10 x 55	1	50j	Vibration Absorbing Rubber Gasket	3
15j	Wing Nut M6	1	51j	Table Mount	1
16j	Lock Washer	1	52j	Nameplate	1
17j	Coil Washer	1	53j	Rivet 2 x 6	1
18j	Taper	1	55j	Spring Washer Ø4	1
19j	Clutch Arm	1	56j	Bolt M4 x 8	1
20j	Adjustment Bolt M6 x 10	1	57j	Clamp of Capacitor	1
21j	Brake Shoe	1	58j	Capacitor	1
22j	Bearing 6202	1	59j	End Cover	1
23j	Clutch Sleeve	1	60j	Spring Washer Ø4	1
24j	Clutch Shaft	1	61j	European Style Socket	1
25j	Flat Rubber Washer	1	62j	European Style Plug	1
26j	Clutch Plate	1	63j	ON/OFF Control Box	1
27j	Lock Nut	1	64j	Thrust Spring Ring	1
28j	Flat Washer Ø14	1	65j	Cushion Plate	1
29j	Bolt M6 x 10	1	66j	Bolt M6 x 20 (not shown)	2
30j	Clutch Cork	1	67j	Nut M8	3
31j	Round Spring Plate	1	68j	Spring Washer Ø8	3
32j	Flywheel	1	69j	Flat Washer Ø8	3
33j	Fan Blade	1	70j	Carriage Bolt	3
34j	Flat Washer Ø6	1	71j	Belt (size 41) (not shown)	1
35j	Spring Washer Ø6	1	72j	Wood Screw (not shown)	4
36j	Bolt M6 x 10	1	73j	Flat Washer (not shown)	4

Note: When ordering parts for this component use the suffix “j”.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

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J - MOTOR ASSEMBLY DRAWING



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